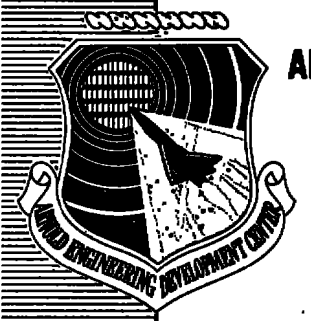

AN INVESTIGATION OF BOATTAIL GEOMETRY AND REYNOLDS NUMBER EFFECTS ON FOREBODY AND AFTERBODY DRAG AT TRANSONIC MACH NUMBERS

PROPULSION WIND TUNNEL FACILITY
ARNOLD ENGINEERING DEVELOPMENT CENTER
AIR FORCE SYSTEMS COMMAND
ARNOLD AIR FORCE STATION, TENNESSEE 37389

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Prepared for

DIRECTORATE OF TECHNOLOGY
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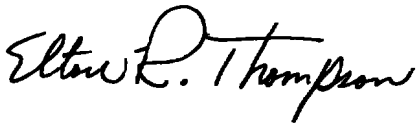

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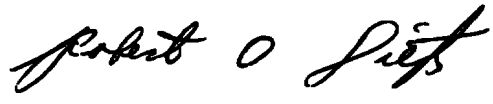

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An experimental investigation was conducted in the AEDC 16-foot Transonic Wind Tunnel (16T) to determine both Reynolds number and nozzle afterbody configuration effects on model forebody and afterbody drag. The model was a sting-mounted body of revolution with interchangeable contoured, cylindrical, and 15-deg boattail configurations. Pressure and force data were obtained at Mach numbers from 0.60 to 1.40 and at unit Reynolds numbers from

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20. ABSTRACT (Continued)

1.47×10^6 per foot to 5.3×10^6 per foot. The experimental results showed that large variations in afterbody drag levels produced no significant change in forebody drag. The data also revealed that all three configurations exhibited little or no Reynolds number dependence subsonically and that only the 15-deg boattail afterbody was affected by Reynolds number supersonically. It was also demonstrated that data precision and wind tunnel calibration can have a significant effect on model drag and should be given careful consideration.

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PREFACE

The work reported herein was conducted by the Arnold Engineering Development Center (AEDC), Air Force Systems Command (AFSC), under Program Element 65807F. The results of the investigation were obtained by ARO, Inc. (a subsidiary of The Sverdrup Corporation), contract operator of AEDC, AFSC, Arnold Air Force Station, Tennessee, under ARO Project Number P41T-E5A in support of Research Project Number P32P-HOA. The author of this report was A. V. Spratley, ARO, Inc. The data analysis was completed on September 1, 1976, and the manuscript (ARO Control No. ARO-PWT-TR-76-116) was submitted for publication on October 8, 1976.

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1.0 INTRODUCTION

At the present time, evaluation of the effects of Reynolds number and nozzle afterbody/boattail configuration on aircraft end drag is generally accomplished by testing scale models on strain gage balances which measure forces only on the portion of the model which is to be varied. Recent investigations (Ref. 1) of afterbody drag have led to the postulation that changes in afterbody drag are offset by changes in forebody drag and that current testing techniques are open to question. To investigate the validity of this postulation and other related test techniques, a wind tunnel experiment using an extensively pressure-instrumented body of revolution with three interchangeable afterbody sections was conducted in the AEDC Propulsion Wind Tunnel (16T) at Mach numbers from 0.60 to 1.40 and free-stream unit Reynolds numbers from 1.47×10^6 per foot to 5.3×10^6 per foot.

An existing axisymmetric model which had a cross-sectional area distribution contoured to represent a typical twin jet fighter was used. An additional boattail was fabricated with an area distribution designed to have approximately twice the subsonic afterbody pressure drag of the contoured model. To provide a large contrasting afterbody drag change, a cylindrical boattail was fabricated for the afterbody.

Also investigated were the effect of Reynolds number variation at Mach numbers 0.6, 0.9, and 1.20, the influence of grit strips placed on the model nose, and the effect of a jet plume simulated with high pressure air.

2.0 APPARATUS

2.1 WIND TUNNEL

Tunnel 16T is a closed-circuit, continuous flow wind tunnel capable of operation between Mach numbers 0.20 and 1.60. The test section is 16 by 16 ft in cross section and 40 ft in length. The tunnel can be operated within a stagnation pressure range from 120 to 4,300 psfa, depending on Mach number. The tunnel test section stagnation temperature can be varied from approximately 80°F to a maximum of 160°F. Perforated walls in the test section allow continuous operation through the Mach number range with a minimum of wall interference. A desired subsonic test section Mach number is obtained by setting tunnel total pressure and plenum static pressure in accordance with a previously determined calibration. Desired supersonic Mach numbers are obtained by setting tunnel nozzle contour, tunnel total pressure, and plenum static pressure, also in accordance with a previously determined tunnel calibration. A more complete description

of the wind tunnel and its operating characteristics can be found in Ref. 2. A sketch showing the details of the perforated wall pattern and the model location in the test section is shown in Fig. 1.

2.2 MODEL CONFIGURATION

2.2.1 Basic Model

The basic model was a body of revolution with an ogive nose and a cross-sectional area distribution that was representative of a typical twin jet fighter. A sketch of the model geometry for the forebody and contoured boattail is shown in Fig. 2. The geometry of the three boattails is shown in Fig. 3. A photographic comparison of the actual boattails is presented in Fig. 4. The normalized area distribution for the model with the three boattail configurations is shown in Fig. 5.

The model was sting mounted on the 16T sting support system as shown in Fig. 6. The sting was 6 in. in diameter and extended approximately eight sting diameters downstream from the end of the model. Aft of this point, the sting was adapted to the tunnel sting. A diagram of the sting and adaptor geometry is presented in Fig. 7.

The model was constructed entirely of aluminum. The forebody had milled slots to accept wings; however, for this investigation wooden fillers were inserted into the slots and then formed to obtain a smooth contour.

2.2.2 Plume Simulation Configuration

For the portion of the experiment in which plume effects on forebody and afterbody drag were to be investigated, the 15-deg boattail was fitted with a steel turnaround ring assembly at the exit plane, as shown in Fig. 8. Steel tubing around the sting supplied high pressure air to the turnaround ring, which turned the flow 180 deg, thus simulating an annular jet., The tubing installation is shown in Fig. 9.

2.3 INSTRUMENTATION

To measure the total aerodynamic loads the model was mounted on a six-component strain-gage balance. The model angle of attack was measured by an internally mounted angular position indicator, and the model roll angle was measured with the standand 16T potentiometer. The 16T differential pressure system was used to measure the model surface pressures, model base pressures, and tunnel floor pressures.

The contoured and 15-deg boattail configurations had 199 surface pressure orifices and four base pressure orifices. The pressure distribution on the cylindrical boattail was determined by 148 surface pressure orifices. All pressure orifices were flush mounted and were located along four body radials, 90 deg apart. The orifice locations are presented in Table 1. When the cylindrical boattail configuration was installed over the contoured boattail, the surface pressure orifices on the contoured boattail were used to measure the base pressure.

Electrical signals from the balance, pressure transducers, angular position indicator, roll angle indicator, and standard tunnel instrumentation were digitized and stored on magnetic tape in addition to being input to the facility computer for online data reduction. Pressure data were also monitored graphically on a cathode ray tube (CRT) during the pressure phase of the experiment.

3.0 PROCEDURE

3.1 GENERAL

The data presented in this report were obtained at free-stream Mach numbers 0.60, 0.80, 0.85, 0.90, 0.95, 1.00, 1.10, 1.20, and 1.40. The characteristic Reynolds number, based on a model length of 10.837 ft, was varied from 15.93×10^6 to 57.44×10^6 per foot. Table 2 shows a summary of the test matrix covered.

The experiment was divided into two phases; the first was devoted to obtaining pressure data, and the second, to obtaining force and moment data from the balance. During a portion of the first phase, model angle of attack was varied from -1.0 to 1.0 deg, and the model was rolled to angles from -90 to 180 deg.

A boundary-layer transition grit strip was on the nose of the body during a large portion of the experiment. The transition strip was 0.1 in. in width and was located 2.90 in. downstream of the model nose (X/L = 0.0223). Grit size was determined from criteria established during a previous test using this model. Figure 10 shows the minimum grit height required for transition versus Reynolds number based on these criteria. During a major portion of the experiment, a grit number size of 100 was used. However, the grit size was changed to No. 70 for a portion of the second phase to determine whether this change in grit size had any effect on the force and moment data.

During the jet plume simulation portion of the first phase of the experiment, the supply air pressure to the annular nozzle was varied from 0 to 1,000 psi. Since only the overall effect of a jet plume was desired, the model nozzle pressure ratio was not determined.

3.2 DATA REDUCTION

In general, the axial force (drag, in this experiment) was determined during the first phase of the experiment by integrating along each one of the four rows of pressure orifices and summing the results of the four integrations. Specifically, the pressure distribution from each row of orifices was integrated to X/L = 0.505, the point of maximum body diameter, and then integrated from 0.505 to X/L = 1.0. In the process of each integration, it was assumed that model nose stagnation pressure was present at the model nose (X/L = 0.0) and that base pressure affected the model at an X/L of 1.0 (pressure at X/L = 1.0 was the average of the four base pressures). The sum of the integrations along each of the four rows to X/L = 0.505 was designated the forebody pressure drag. The four integrations from X/L = 0.505 to 1.0 were summed to obtain the afterbody pressure drag. The total pressure drag was the sum of the forebody and afterbody pressure drag. As shown in the following equations, all drag forces were converted into drag coefficient form based on the model maximum cross-sectional area (1.424 ft^2).

$$CDP_{FB} = \frac{\sum_{X/L=0}^{X/L=0.505} C_{p_x}\, dA}{A_{max}}$$

$$CDP_{AB} = \frac{\sum_{X/L=0.505}^{X/L=1.0} C_{p_x}\, dA}{A_{max}}$$

$$CDP = \frac{\sum_{X/L=0}^{X/L=1.0} C_{p_x}\, dA}{A_{max}}$$

The balance-measured drag was corrected for the pressure acting on the model balance cavity and on the model base area. The balance-measured drag coefficients were used to obtain pressure drag coefficients by subtracting a calculated skin friction from them. The Frankl-Voishel empirical flat plate, skin friction drag coefficient equation for fully turbulent flow (Eq. 27.66a, Ref. 3) was used to calculate an overall average body skin friction coefficient. The calculated skin friction drag coefficient was based on total model surface wetted area, q_∞, and model maximum cross-sectional area.

3.3 UNCERTAINTY OF MEASUREMENTS

An estimate of the uncertainty of the data measured during the experiments for Mach numbers 0.60, 0.90, and 1.20 is presented in Table 3. The Taylor series error propagation procedure was used to determine the precisions and uncertainties at characteristic Reynolds numbers of 15.93×10^6 and 43.35×10^6. The uncertainties of the incremental drag differences between configurations are primarily repeatability; therefore, repeat data were taken periodically during the test. The repeatability of the data, which is a direct function of data precision for the three afterbody configurations, is presented in Table 4 for Mach numbers 0.60, 0.90, and 1.20 at a characteristic Reynolds number of 43.35×10^6.

4.0 RESULTS AND DISCUSSION

4.1 VALIDITY OF CURRENT TEST TECHNIQUES

Several methods were used during this investigation to ensure that the best quality data possible were acquired. Inviscid flow calculations were used to predict model surface pressure distributions to allow the pressure orifices on the model to be strategically located for maximum resolution of model pressure distribution. Typical pressure distributions measured on the model for Mach numbers 0.60, 0.90, and 1.20 are shown in Fig. 11. Although specific pressure coefficient differences between rows of pressure orifices may be greater than quoted uncertainties, generally each of the four rows of pressure orifices is representative of the overall model pressure distribution.

To ensure that any tunnel flow angularities present did not affect the results, a determination of the effects of a small angle of attack or roll angle on the pressure distribution and drag coefficients was made with the contoured boattail configuration. The effects of roll angle on the afterbody and forebody pressure drag coefficients for Mach numbers 0.60, 0.90, and 1.20 are shown in Figs. 12 and 13. It can be concluded that model roll position was not important in determining the forebody and afterbody pressure drag using the technique outlined in Section 3.2. This conclusion can also be drawn from the data in Fig. 14, where the pressure distributions at $M_\infty = 0.60$ are presented for each of the model orifice rows at model roll angles of 90 and 180 deg.

The pressure-integrated afterbody and forebody drag force coefficients are presented as a function of model angle of attack for various Mach numbers in Figs. 15 and 16, respectively. As was the case for roll angle, a small angle of attack has virtually no effect on the pressure drag. In Fig. 17, sample pressure distributions are presented for approximately 1 and 0 deg angle of attack for three Mach numbers, and as can be seen, a

small angle of attack has a minimal effect on the pressure distributions and is localized on the model forebody near the nose.

Tabulated data consisting of pressure coefficients are presented in Appendix A. Here, pressure distributions are tabulated for all three model configurations at Mach numbers 0.60, 0.90, and 1.20 and unit Reynolds numbers from 1.47 x 10^6 per foot to 5.3 x 10^6 per foot. Each pressure coefficient designation corresponds to one of the pressure orifices on the model (orifices are listed in Table 1). The four base pressure coefficients (CPB1, CPB2, CPB3, and CPB4) correspond to the base pressure orifices located on the 0-, 90-, 180-, and 270-deg radial locations at the model base for the 15-deg boattail and contoured boattail configurations. For the cylindrical section, CPB1, CPB2, CPB3, and CPB4 correspond to pressure orifices 178, 165, 151, and 196, respectively, all of which read model base pressure when the cylindrical boattail was installed. Table A-1 presents a summary of the data that are tabulated in Appendix A.

4.2 AFTERBODY GEOMETRY EFFECTS

The model total pressure drag coefficient from each of the three configurations is presented as a function of Mach number in Fig. 18. It is evident that the drag level varies significantly between configurations. The afterbody pressure drag coefficients are presented for each of the three configurations in Fig. 19. The data in Fig. 19 show that the drag levels also vary significantly between afterbodies. However, despite the large changes in afterbody and total drag, little change was observed in the forebody pressure drag (Fig. 20).

The pressure distributions presented in Fig. 21 demonstrate the extent to which the afterbody geometry affects the forebody drag. As is shown in this figure, the afterbody geometry effects do not propagate upstream beyond the point of maximum body diameter to the forebody portion of the model.

4.3 JET PLUME EFFECTS

The intent of the jet plume simulation portion of the investigation was to produce a change in afterbody drag with an exhaust jet and to determine the resulting effect on forebody drag. The pressure distributions are presented in Fig. 22, and it is evident that only a minor change in the afterbody pressure distribution was caused by the jet. No change in the forebody pressure distribution is evident in the figure. Furthermore, it is evident from Fig. 23 that the jet affects the pressure drag upstream on the boattail only to an X/L value of approximately 0.90. It should be noted that because of a malfunction in the tubing which supplied high pressure air to the turnaround ring assembly, only limited data were obtained in this portion of the investigation.

4.4 EFFECT OF REYNOLDS NUMBER

The effect of Reynolds number on the pressure distribution of the contoured boattail configuration is presented in Fig. 24 for Mach numbers 0.60, 0.90, and 1.20. The pressure drag coefficients for this configuration are presented in Fig. 25 for the same Mach numbers. From Fig. 24 it is seen that increasing Reynolds number tends to make C_p slightly more negative on the forebody. On the afterbody, increasing Reynolds number makes C_p more negative in the flow expansion region; however, as the flow recompresses on the boattail, this trend is reversed. This result has been observed and reported by other investigators (Ref. 4). From Fig. 25, the Reynolds number effect on the afterbody pressure distribution appears to be compensating so that the afterbody pressure drag coefficients exhibit little or no Reynolds number sensitivity at Mach numbers 0.60 and 0.90, and only a slight Reynolds number sensitivity at low Reynolds numbers at Mach number 1.20. Also, subsonically, only a slight Reynolds number effect is shown on the forebody. At Mach number 1.20, though the effect is still small, the trend of decreasing forebody pressure drag with increasing Reynolds number found subsonically is reversed, and a slight increase in forebody pressure drag is evident with increasing Reynolds number. The total pressure drag coefficient, while independent of Reynolds number subsonically, does exhibit a small increase with increasing Reynolds number at supersonic Mach numbers.

In Fig. 26 the pressure distribution on the 15-deg boattail configuration is presented for Mach numbers 0.60, 0.90, and 1.20. It is evident that the Reynolds number trend on the forebody is similar to the trend observed on the contoured boattail configuration. Subsonically, with increasing Reynolds number, the pressure coefficients on the afterbody do become more negative in the flow expansion region and more positive in the recompression region. However, supersonically, there is a more pronounced effect of increased Reynolds number in the recompression region than was observed on the contoured boattail configuration. It appears that a possible cause of this observed Reynolds number effect was a significant viscous/inviscid interaction on the 15-deg boattail at Mach number 1.2.

In Fig. 27, the pressure drag coefficients for the 15-deg boattail configuration are presented for Mach numbers 0.60, 0.90, and 1.20. Whereas the forebody pressure drag coefficient exhibits only a slight Reynolds number dependence for the three Mach numbers, the afterbody pressure drag coefficient appears to be influenced by Reynolds number. Subsonically, afterbody pressure drag increases slightly with increasing Reynolds number. At Mach number 1.20, the afterbody pressure drag increases significantly with increasing Reynolds number, possibly as a result of the previously mentioned viscous/inviscid interaction. As would be expected from the discussion of the forebody

and afterbody pressure drag coefficients, the total pressure drag coefficient, while only slightly dependent on Reynolds number subsonically, is very greatly influenced by Reynolds number at Mach number 1.20.

The pressure drag coefficients for the cylindrical boattail configuration are presented in Fig. 28. Subsonically, no Reynolds number effect is exhibited except for the total pressure drag coefficient at Mach number 0.90, where a slight increase is found with increasing Reynolds number. At Mach number 1.20, both the forebody and total pressure drag coefficients exhibit a slight Reynolds number dependence. The afterbody pressure drag coefficient is independent of Reynolds number.

Data presented in Figs. 29, 30, and 31 show the effect that small free-stream Mach number changes caused by inaccurate measurement of free-stream static pressure would have on the forebody and afterbody pressure drag coefficients. The change in Mach number (ΔM_∞) is the amount of change required to alter the pressure drag coefficient measured at any lower Reynolds number enough for that pressure drag coefficient to equal the pressure drag coefficient at the highest Reynolds number for which data were obtained for a given configuration and Mach number. The Mach number uncertainty was previously presented in Table 3. Thus, as can be concluded from Figs. 29 through 31, the Reynolds number effects on the contoured and cylindrical boattail configurations, previously presented in Figs. 25 and 28, could be the result of a small free-stream Mach number deviation, since the change in free-stream Mach number required to eliminate the Reynolds number effects on these configurations is within the range of the estimated uncertainty of Mach number measurement. In the same manner, the Reynolds number effects on the 15-deg boattail configuration, previously shown in Fig. 27, could in part also be the result of a small Mach number error. As shown in Fig. 31, subsonically, the amount of Mach number error required to eliminate Reynolds number effects on the forebody and afterbody is within the range of measurement uncertainty. However, the ΔM_∞ required at Mach number 1.20 to eliminate the Reynolds number effect on the 15-deg boattail afterbody appears to be too large to be caused by measurement uncertainties.

Besides the uncertainty of measuring free-stream Mach number, an inadequate tunnel calibration could cause the Reynolds number effects of the type shown in Figs. 25, 27, and 28. The tunnel calibration used in this investigation for a Mach number of 0.60 is presented in Fig. 32. This is a calibration of Reynolds number versus DELM, which is the difference between a Mach number calculated using test section plenum static pressure and free-stream Mach number obtained from test section centerline static pressure measurements. It is evident that there is an increase in DELM with increasing Reynolds number. Although this trend is within the Mach number uncertainty, for Tunnel 16T it

has been observed to be very repeatable. In the past, the transonic wind tunnels, which use the test section plenum pressure for calibration, have usually been calibrated at a single tunnel total pressure for each Mach number under the assumption that DELM was independent of Reynolds number. (This assumption has been demonstrated to be adequate for most types of test, and several facilities still use this procedure for tunnel calibration.) The influence of this tunnel calibration procedure is illustrated in Fig. 33, where a comparison is presented between the pressure drag data obtained during this investigation and the data that would have been obtained had a tunnel calibration been used which was independent of Reynolds number. In this figure, it can be seen that large and compensating Reynolds number trends would have been predicted for the afterbody and forebody. It is thus apparent and is to be emphasized that "precision instrumentation" and a very high quality tunnel calibration are necessary to avoid the possibility of erroneous conclusions where forces are measured on a portion of a body and Reynolds number trends are interpreted.

The effect of grit on the forebody and afterbody pressure drag for the model with the 15-deg boattail installed is presented in Fig. 34. The differences at the lowest Reynolds numbers are within the data uncertainty. At M_∞ = 0.90, the differences between the grit-on and grit-off data seen at a Reynolds number of 27 x 10^6 could be the result of an error in free-stream static pressure, since the differences present on the forebody are in the opposite direction from the differences on the afterbody. Aside from the aforementioned data characteristics, no grit effects are evident in the pressure drag data for the three Mach numbers.

4.5 BALANCE DATA CORRELATION

As previously pointed out in Section 1.0, balance-measured drag data were acquired to correlate with drag data obtained from pressure integrations. It should be noted that all balance drag data presented herein are corrected for base and cavity pressure and are also adjusted for skin friction, unless otherwise specified. As is generally the case with a comparison between balance-measured drag data and pressure drag data, the agreement between the two data sets is heavily dependent on the calculated skin friction drag.

In Fig. 35, a comparison between calculated skin friction drag and the experimentally determined skin friction drag is presented for Mach numbers 0.60, 0.90, and 1.20. The Frankl-Voishel empirical, fully-turbulent, flat-plate skin friction equation and White's turbulent boundary-layer calculation technique (Ref. 5) were used to generate the calculated skin friction drag curves. White's calculation technique, which uses numerically smoothed experimental pressure distributions, was used only in calculating skin friction drag on the contoured boattail configuration. It is evident that the

calculated skin friction drag is in every case larger than the experimental skin friction drag. However, the trends with Reynolds number are in agreement with the experimental results. Thus, although the magnitude of the drag coefficients may differ, a comparison of trends between pressure drag coefficients obtained from balance data and integrated pressure drag data can be made. A comparison of the integrated pressure drag coefficients and the drag coefficients obtained with the force balance is presented in Fig. 36 for the model with the contoured boattail configuration installed. The drag coefficients obtained with the force balance are presented both "as measured" and after being adjusted by subtracting the calculated skin friction drag. The same comparison is made in Fig. 37 for the model with the 15-deg boattail afterbody configuration installed. The agreement between the adjusted balance drag data and the integrated pressure drag data is reasonable, and the trends with Mach number obtained from the integrated pressure are consistent with the force balance measurement.

The effect of Reynolds number on model drag coefficient for Mach numbers 0.60, 0.90, and 1.20 is shown in Fig. 38. In this figure, the trends shown by the pressure-integrated data are substantiated by the balance-measured data. Once again it can be seen that only the 15-deg boattail configuration exhibits any significant Reynolds number dependence, and then only at $M_\infty = 1.20$.

As Fig. 39 shows, the result of a grit study on the cylindrical boattail configuration during the second phase of the experiment is similar to the results of the pressure-integrated drag study; that is, there is essentially no grit effect on the model drag coefficient. This may be due to the fact that the model nose was joined to the forebody at model station 28.01, and a small, forward-facing step at the junction of the two model sections may have tripped the flow in all cases.

5.0 SUMMARY OF RESULTS AND CONCLUSIONS

An experimental investigation was conducted in the AEDC Transonic Propulsion Wind Tunnel (16T) to assess the validity of test techniques currently used to obtain aircraft nozzle afterbody drag data during the wind tunnel testing phase of aircraft development programs. The model used for this investigation was a body of revolution and had interchangeable boattail configurations. The Reynolds number and afterbody geometry variations were large enough to include the conditions normally encountered in wind tunnel testing.

The following conclusions are based on an analysis of the experimental data obtained during this investigation:

1. Large variations in model boattail geometry did not affect forebody drag at subsonic and transonic Mach numbers for the length-to-diameter ratio model used in this investigation.

2. Reynolds number effects were minimal for the contoured and cylindrical boattail configurations; however, the 15-deg boattail configuration displayed a significant Reynolds number effect at supersonic Mach numbers.

3. Transition grit strips of the size normally used in wind tunnel testing had little or no effect on the pressure and force data obtained.

4. The simulated jet plume affected only that portion of the afterbody adjacent to the nozzle exit.

In addition, the following conclusions appear to be indicated by the results obtained:

1. The quality of pressure data obtained is a direct function of the accuracy of the tunnel calibration and precision of data measurement.

2. Small wind tunnel flow angularities do not significantly affect pressure drag data.

3. Empirical calculations can provide only an estimate of skin friction. However, theoretical skin friction calculations, based on boundary-layer theory and experimental pressure distributions, are a significant improvement over empirical methods.

In summary, the current test technique of having only the nozzle afterbody metric used to obtain nozzle afterbody performance for models with the type area distribution used in this investigation is valid provided that: 1) due consideration is given to the metric break location, and 2) the tunnel calibration and instrumentation precision are adequate. However, additional advancement in methods used to calculate skin friction drag are still required to extract the correct model pressure drag from force balance data.

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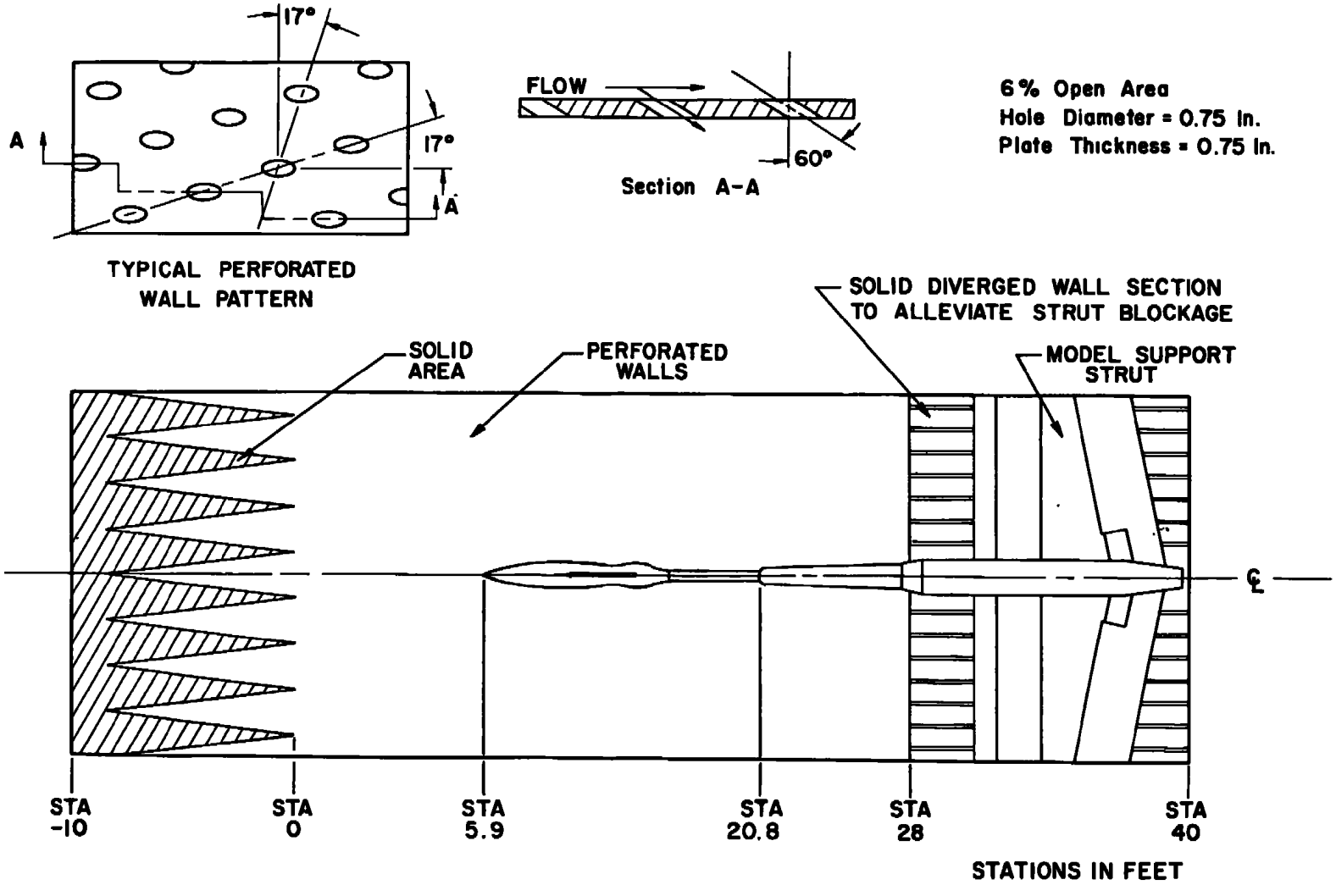


Figure 1. Location of model in wind tunnel test section.

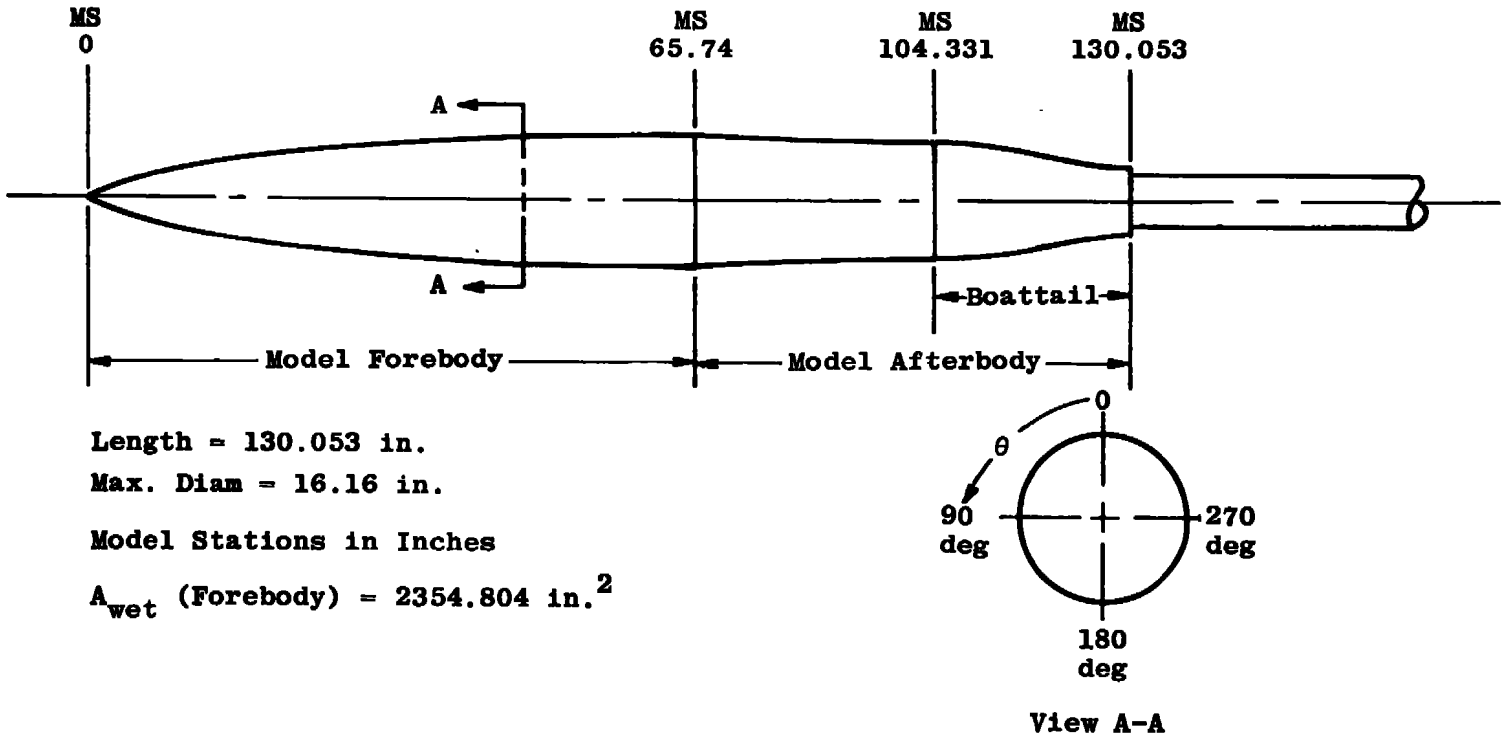
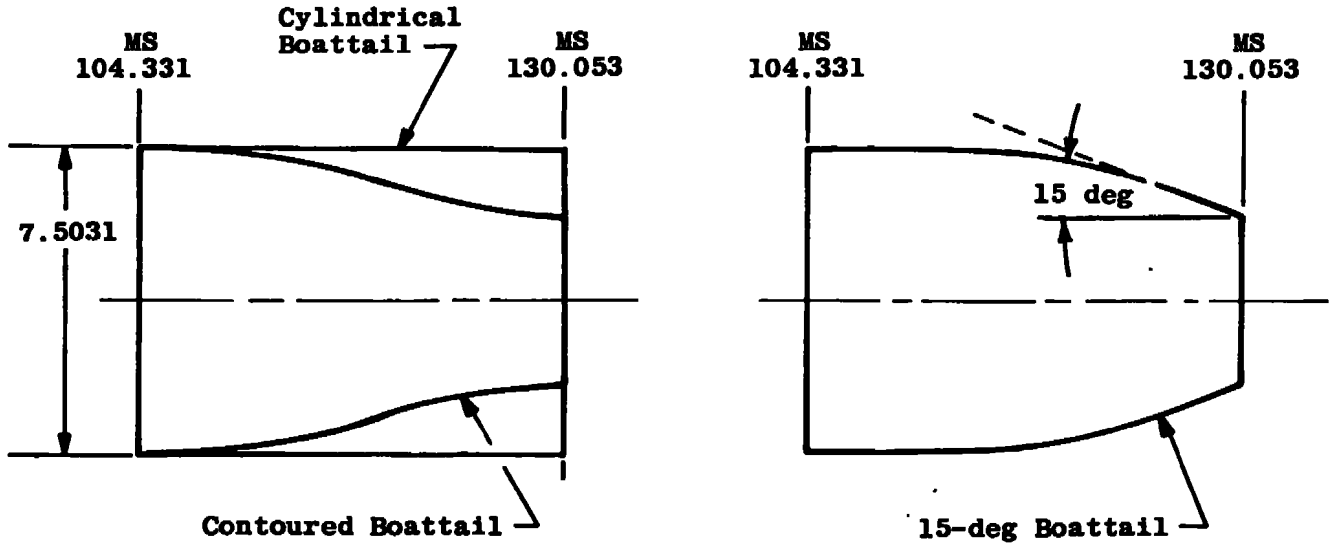


Figure 2. Definition of model parts.



Boattail Characteristics

	Contoured	Cylindrical	15-deg
Length	25.72	25.72	25.72
Exit Radius	4.2678	7.5031	4.2678
Installed Boattail Afterbody Wetted Area, $in.^2$	2870.149	3106.3131	2980.0553

Model Stations and Dimension in Inches
(Coordinates are given in Table 1.)

Figure 3. Summary of boattail geometry.

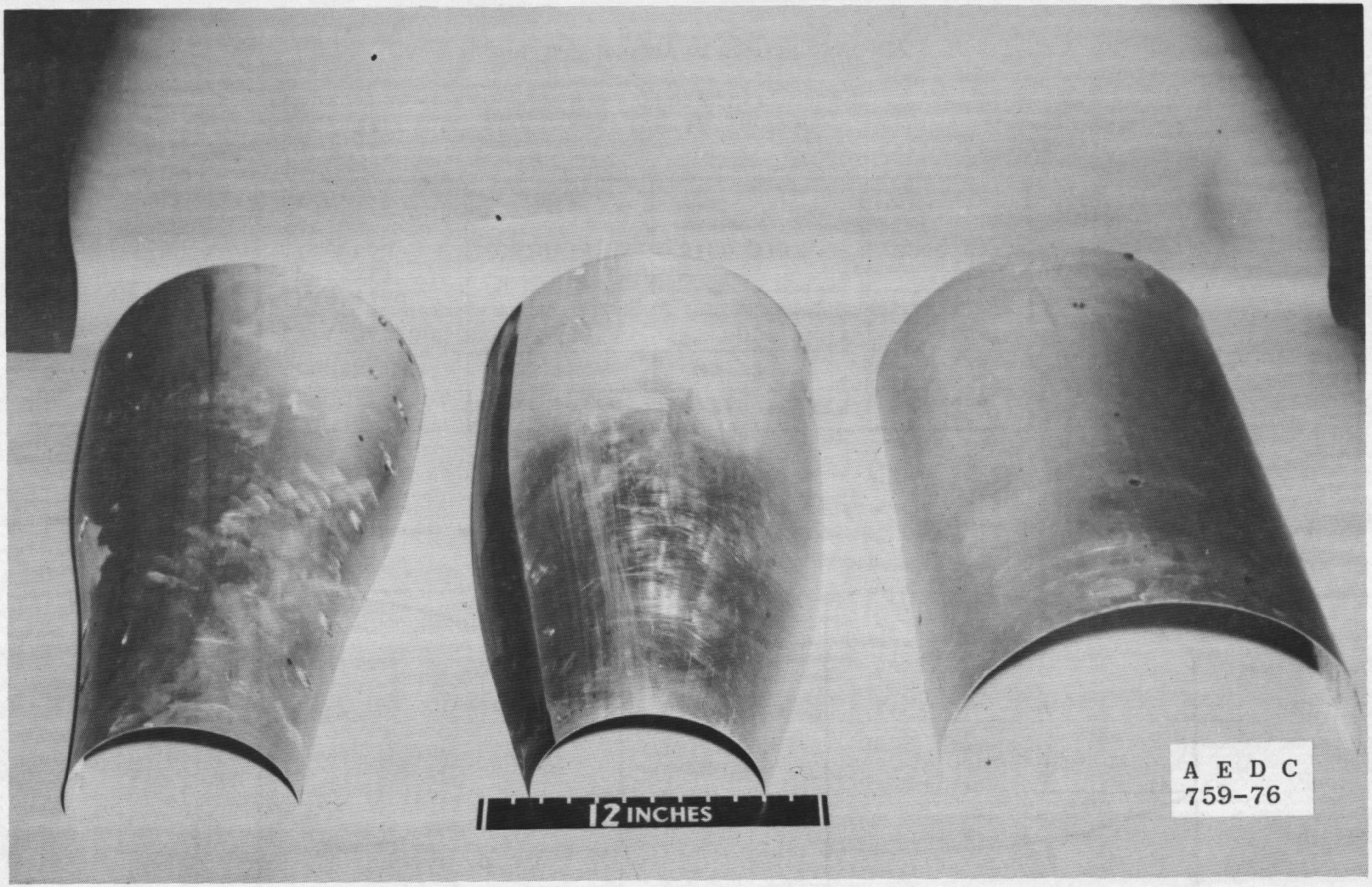


Figure 4. Boattail geometry comparison photograph.

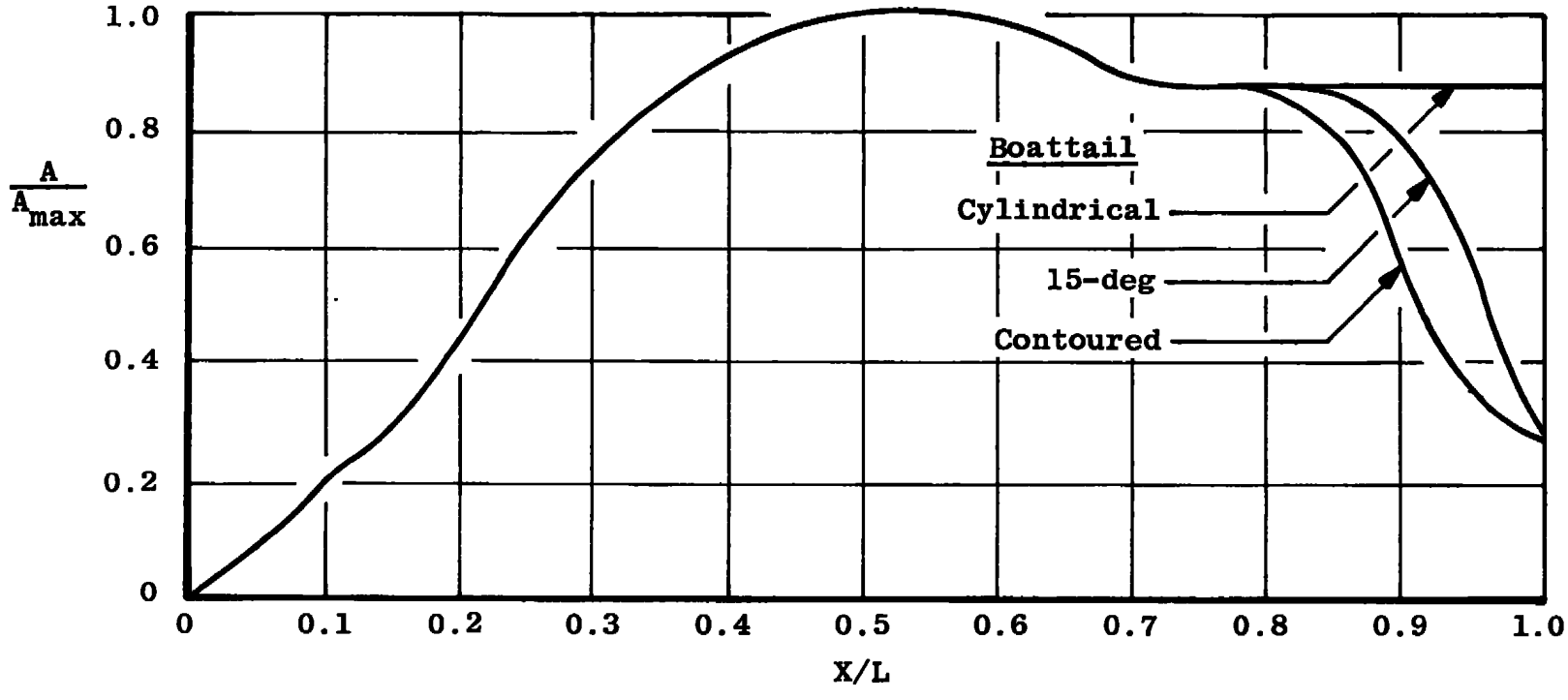


Figure 5. Model cross-sectional area distribution.

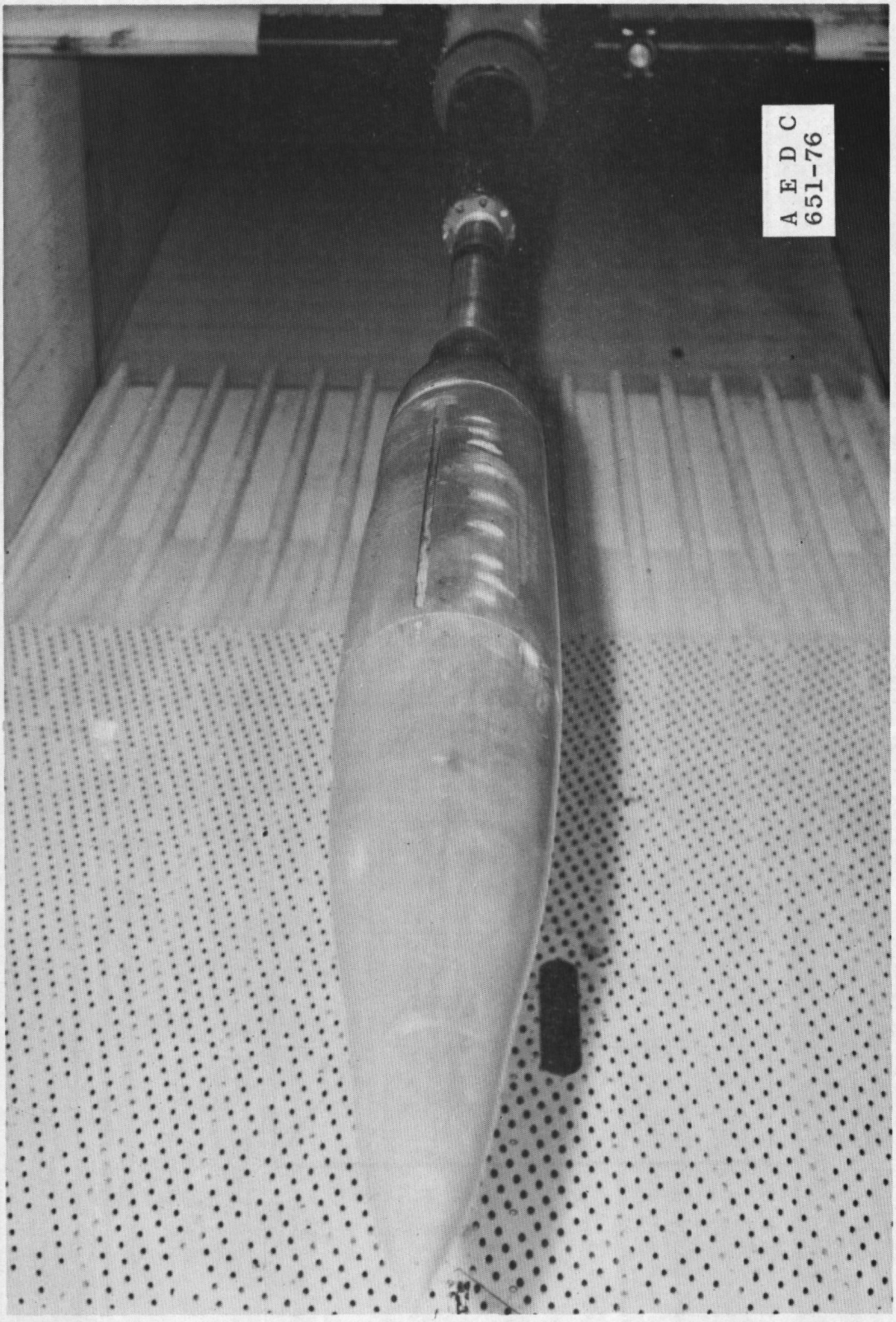


Figure 6. Installation photograph of model in test section.

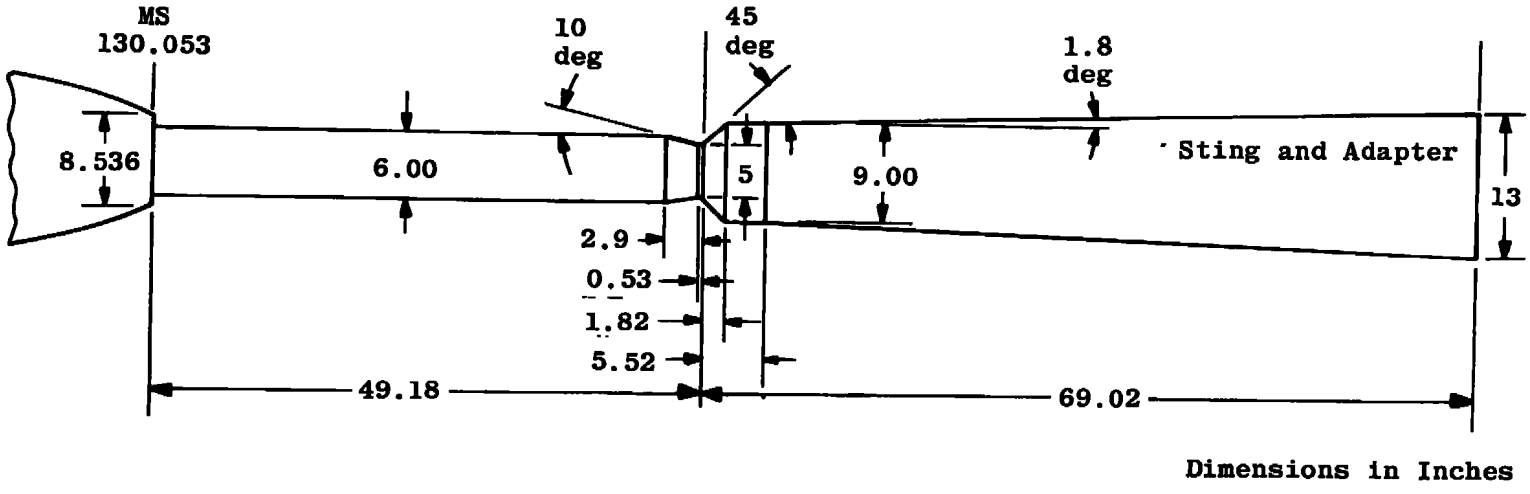


Figure 7. Sting and adaptor geometry with dimensions.

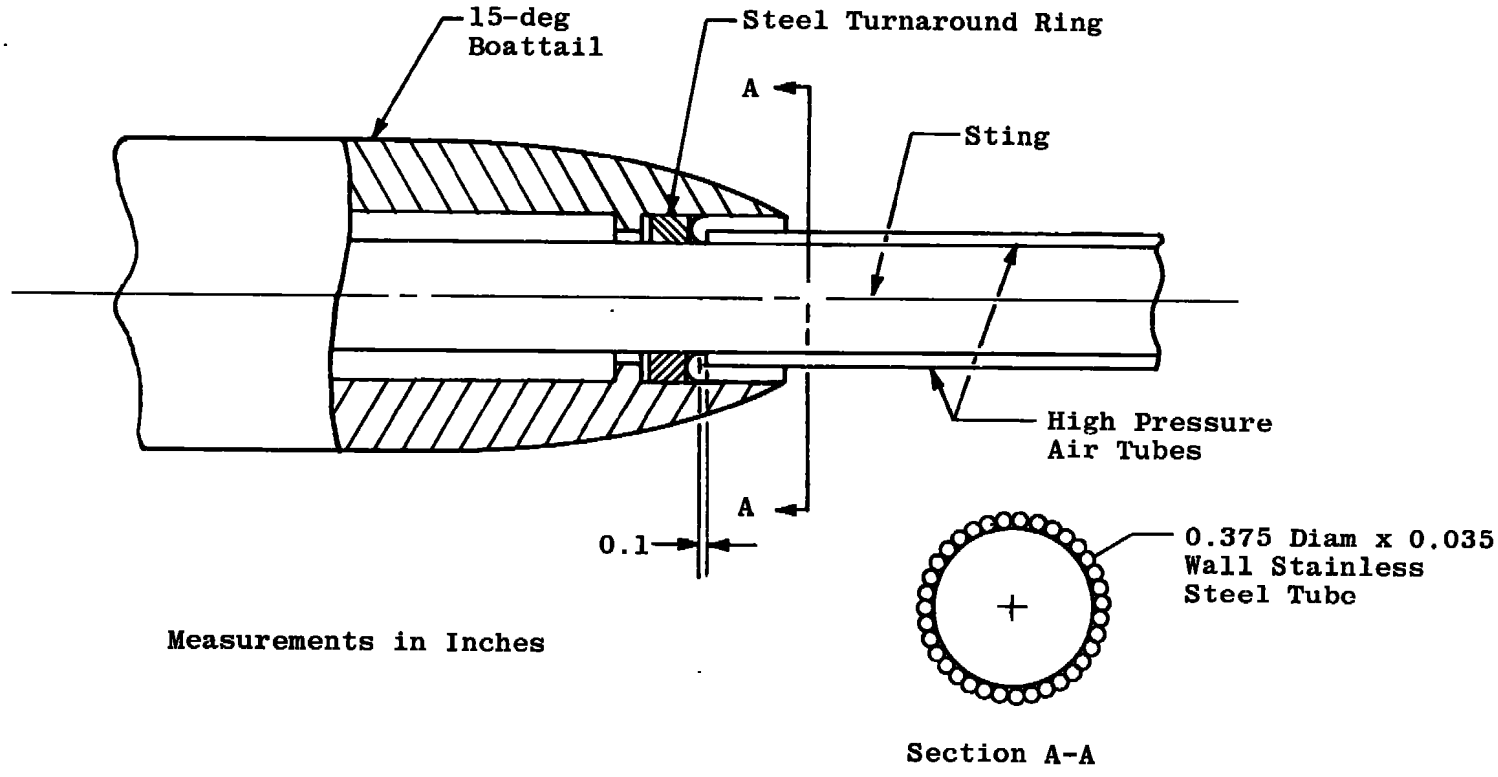


Figure 8. Jet plume effects configuration geometry.

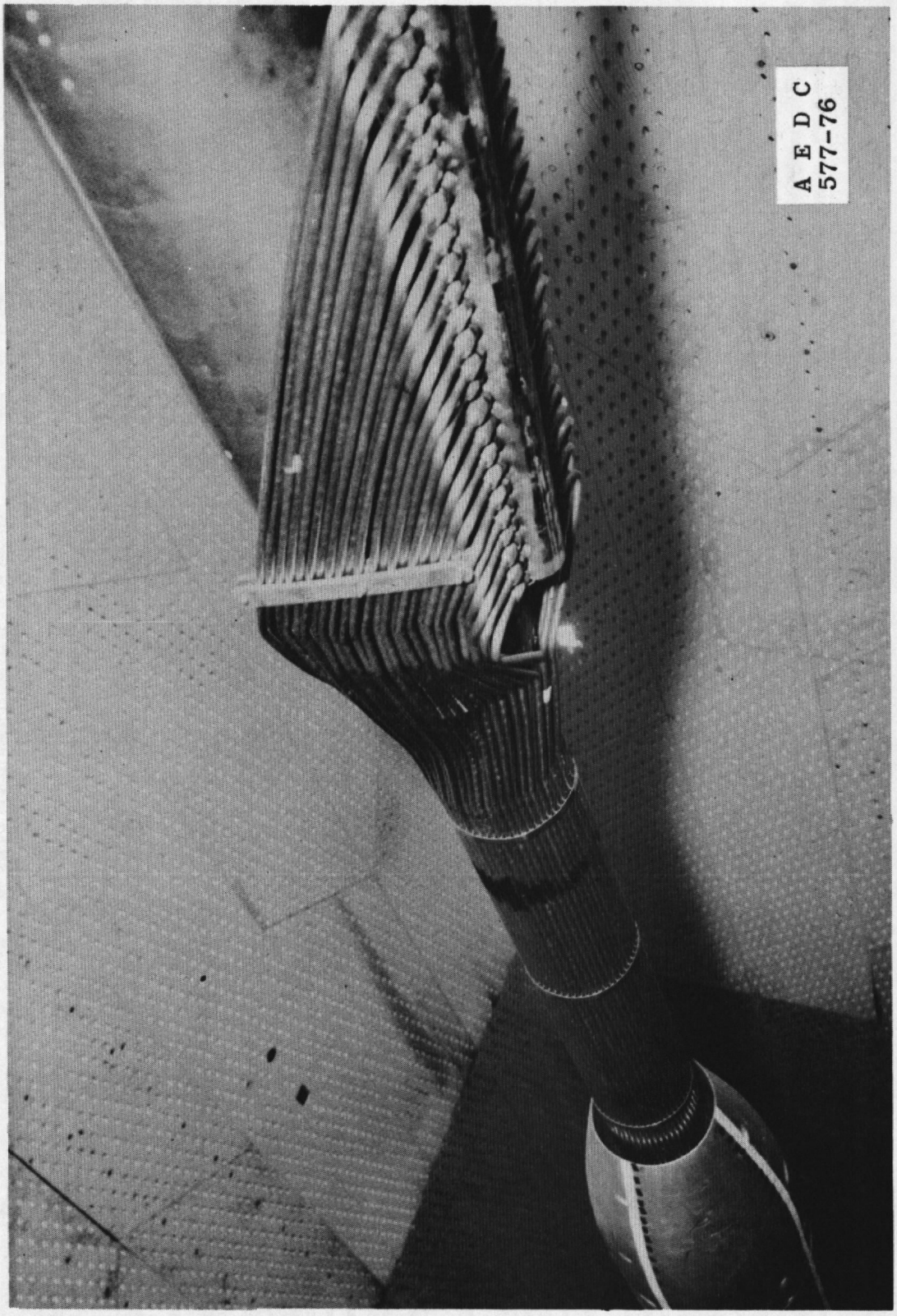


Figure 9. Installation photograph of jet plume effects configuration.

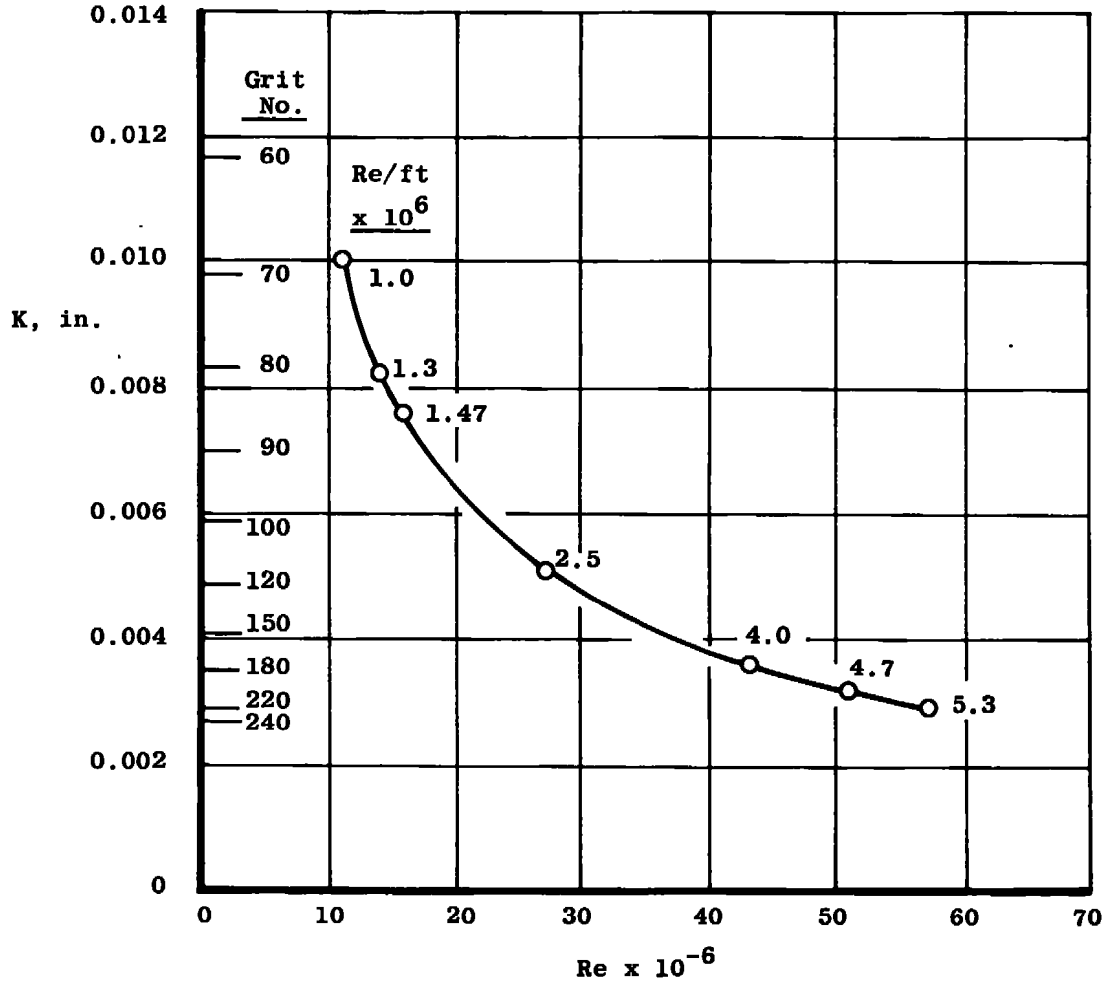
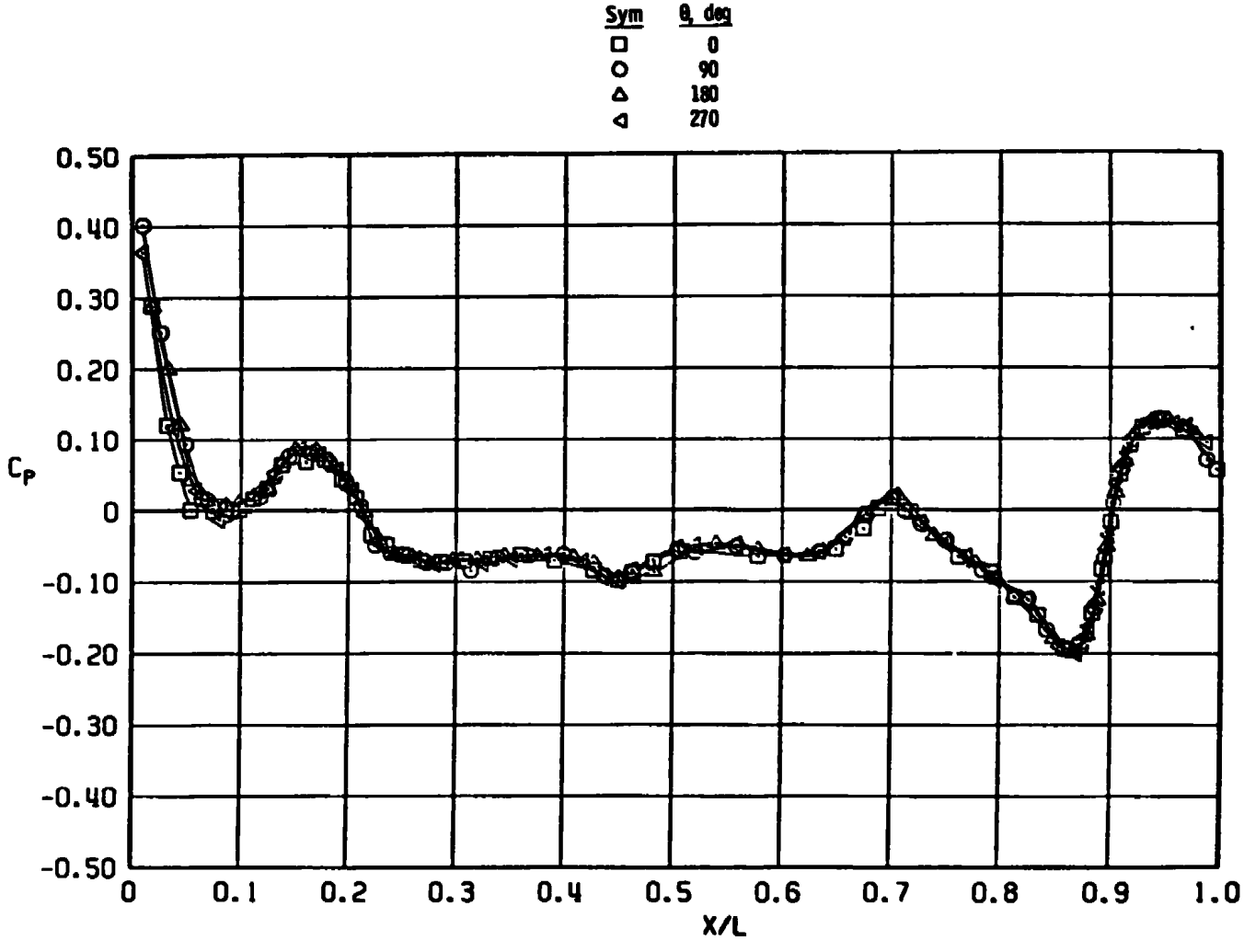
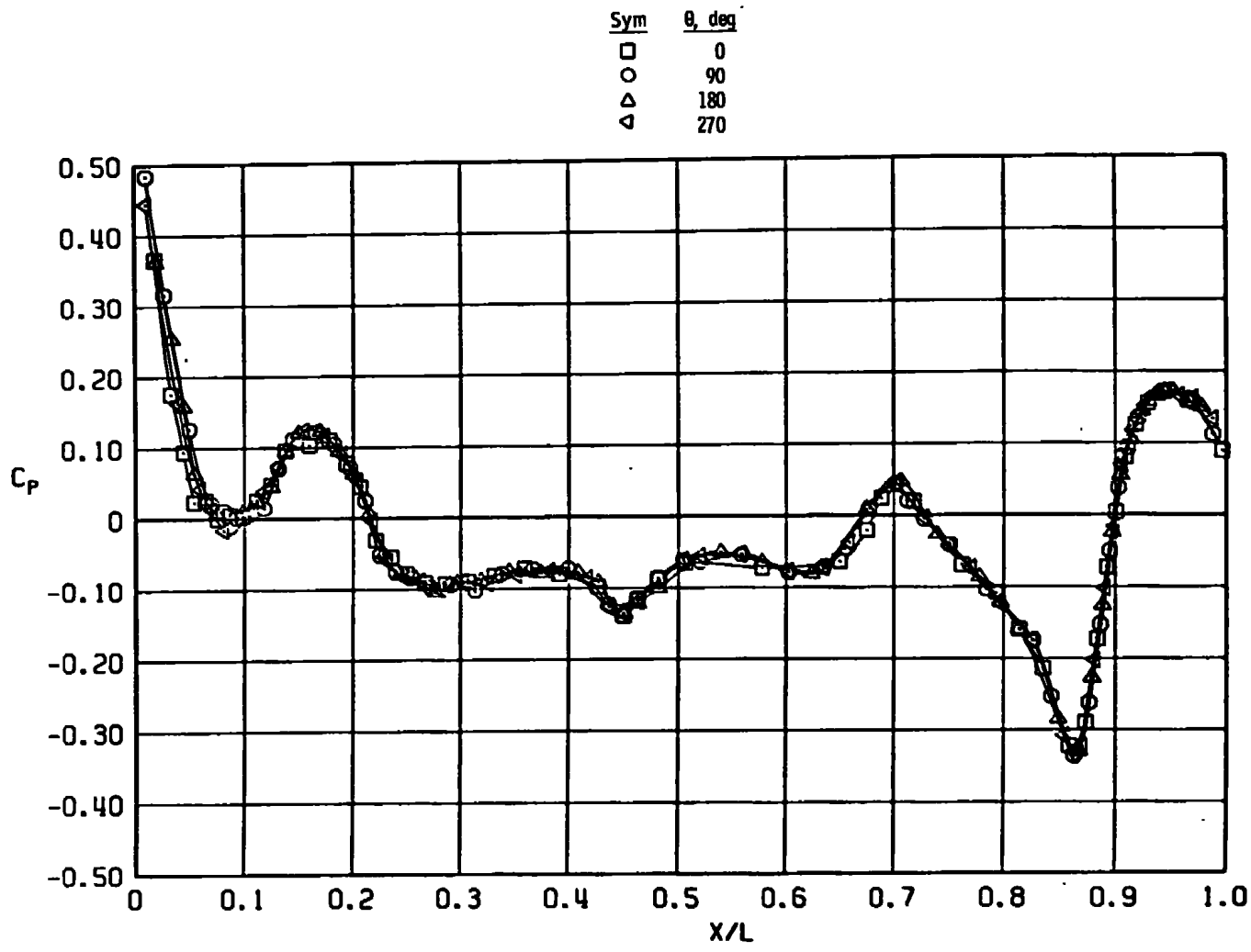


Figure 10. Minimum grit height to trip laminar boundary layer, nose grit located at X/L = 0.021.



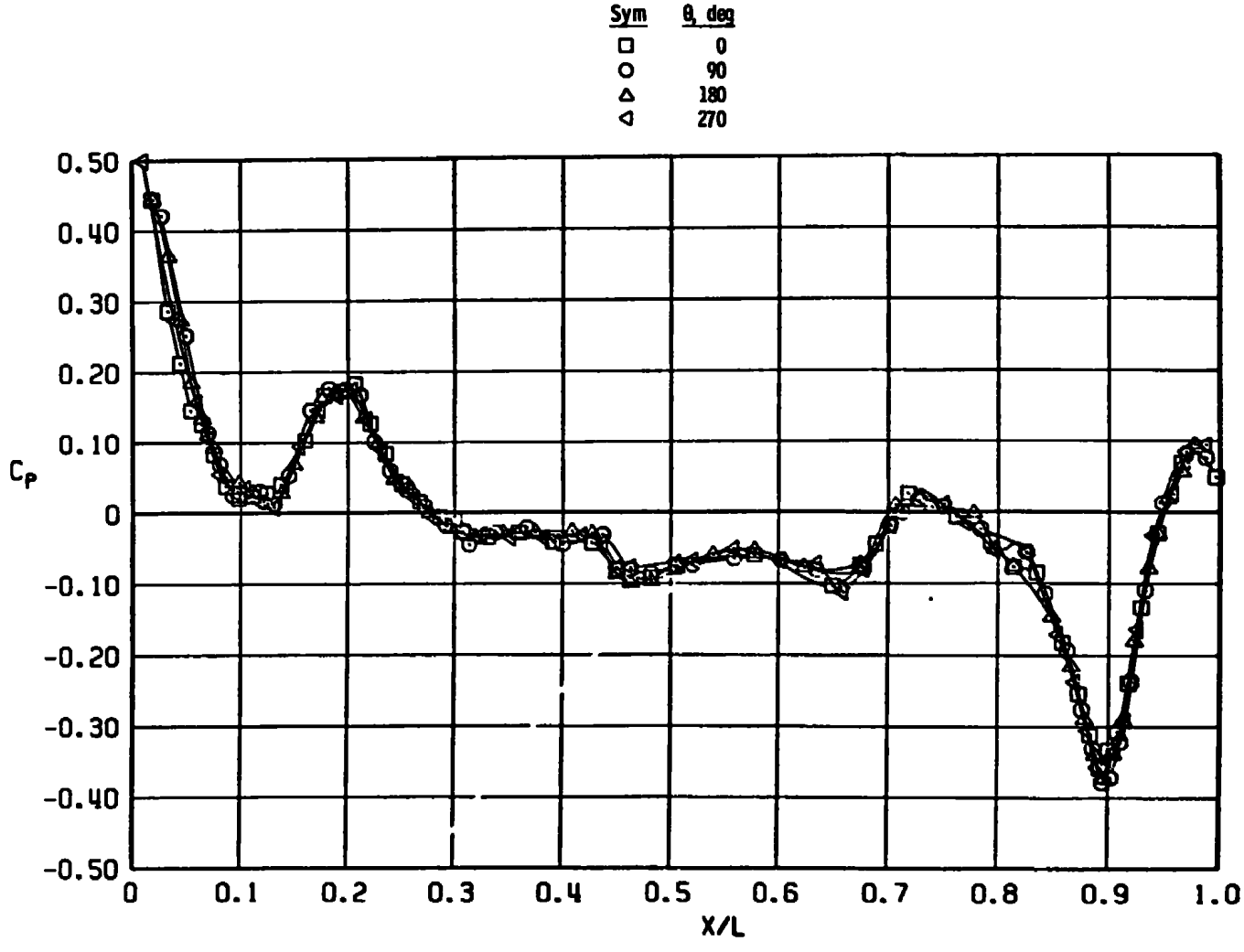
a. $M_\infty = 0.60$

Figure 11. Model pressure distribution for contoured boattail configuration at Re = 43 x 10^6.



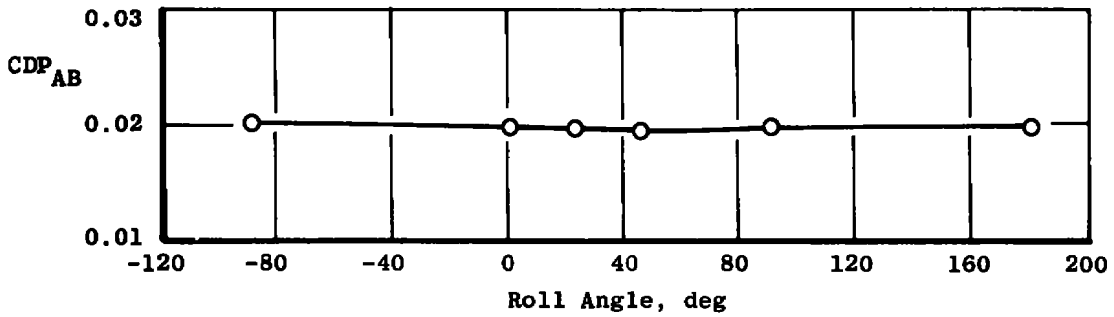
b. $M_\infty = 0.90$

Figure 11. Continued.

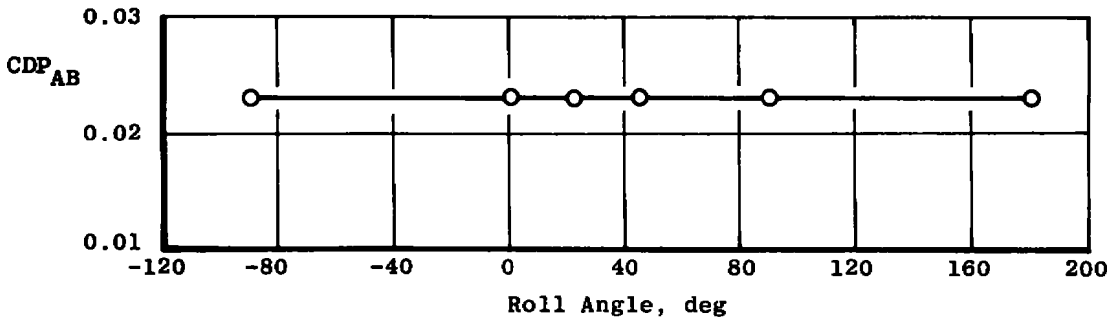


c. $M_\infty = 1.20$

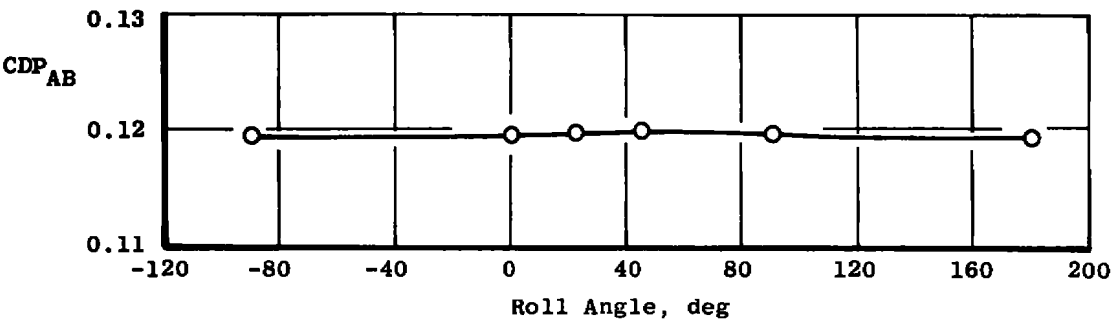
Figure 11. Concluded.



a. $M_\infty = 0.60$

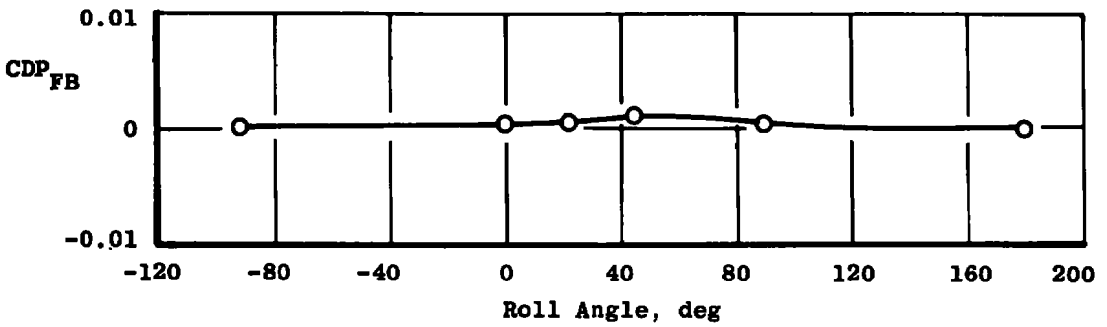


b. $M_\infty = 0.90$

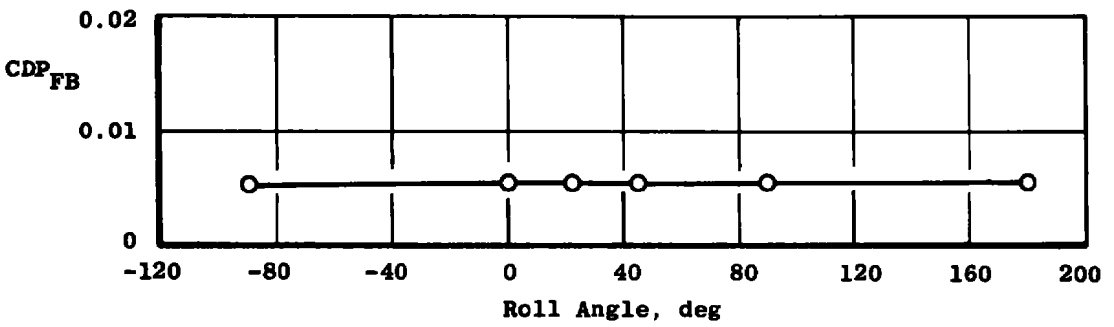


c. $M_\infty = 1.20$

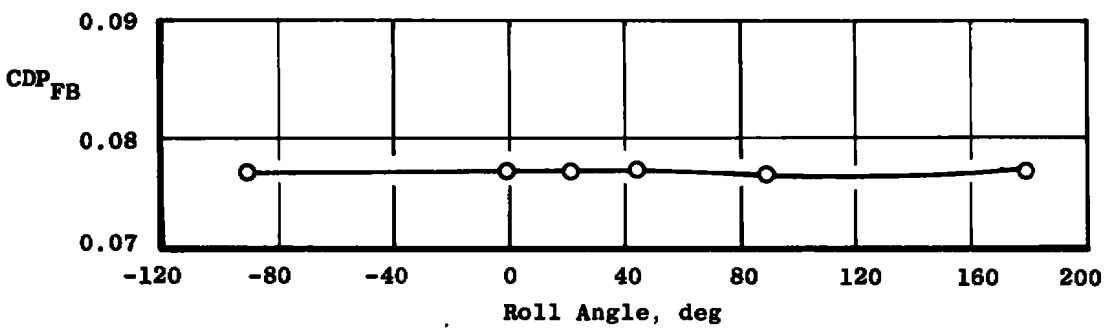
Figure 12. Effect of roll on afterbody pressure drag coefficient for the contoured boattail configuration, Re = 43 x 10^6.



a. $M_\infty = 0.60$

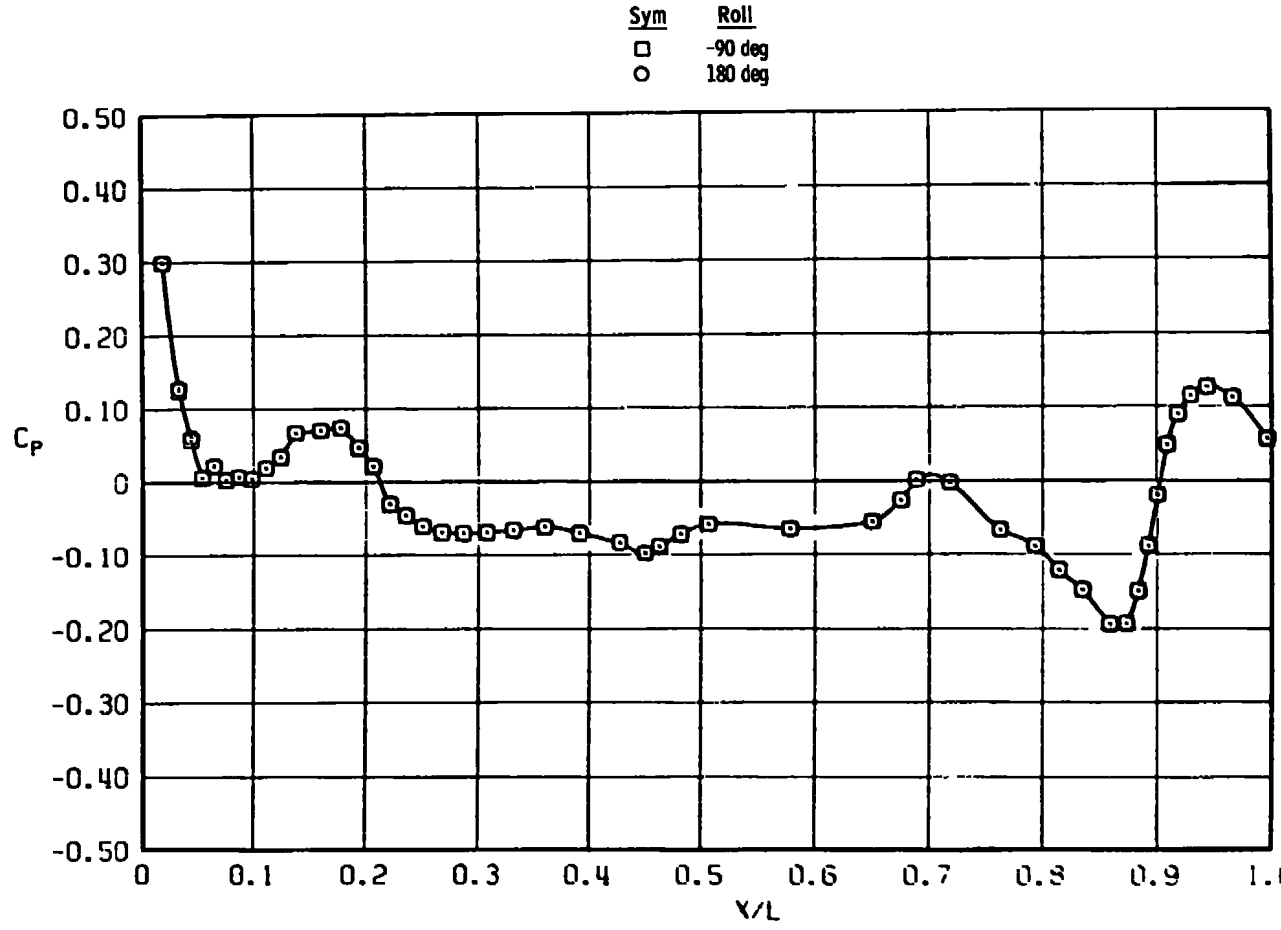


b. $M_\infty = 0.90$



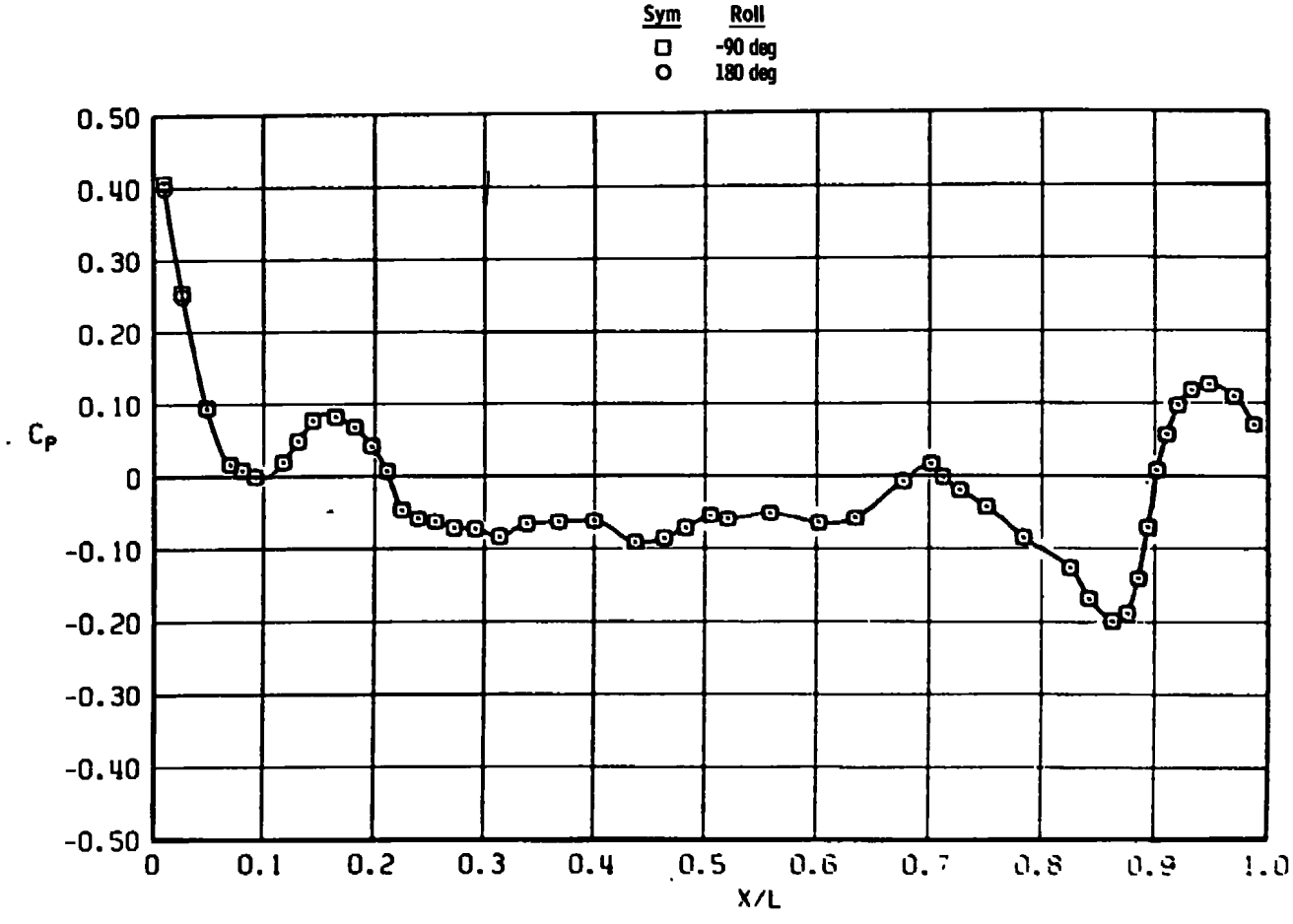
c. $M_\infty = 1.20$

Figure 13. Effect of roll on forebody pressure drag coefficient for the contoured boattail configuration, Re = 43 x 10^6.



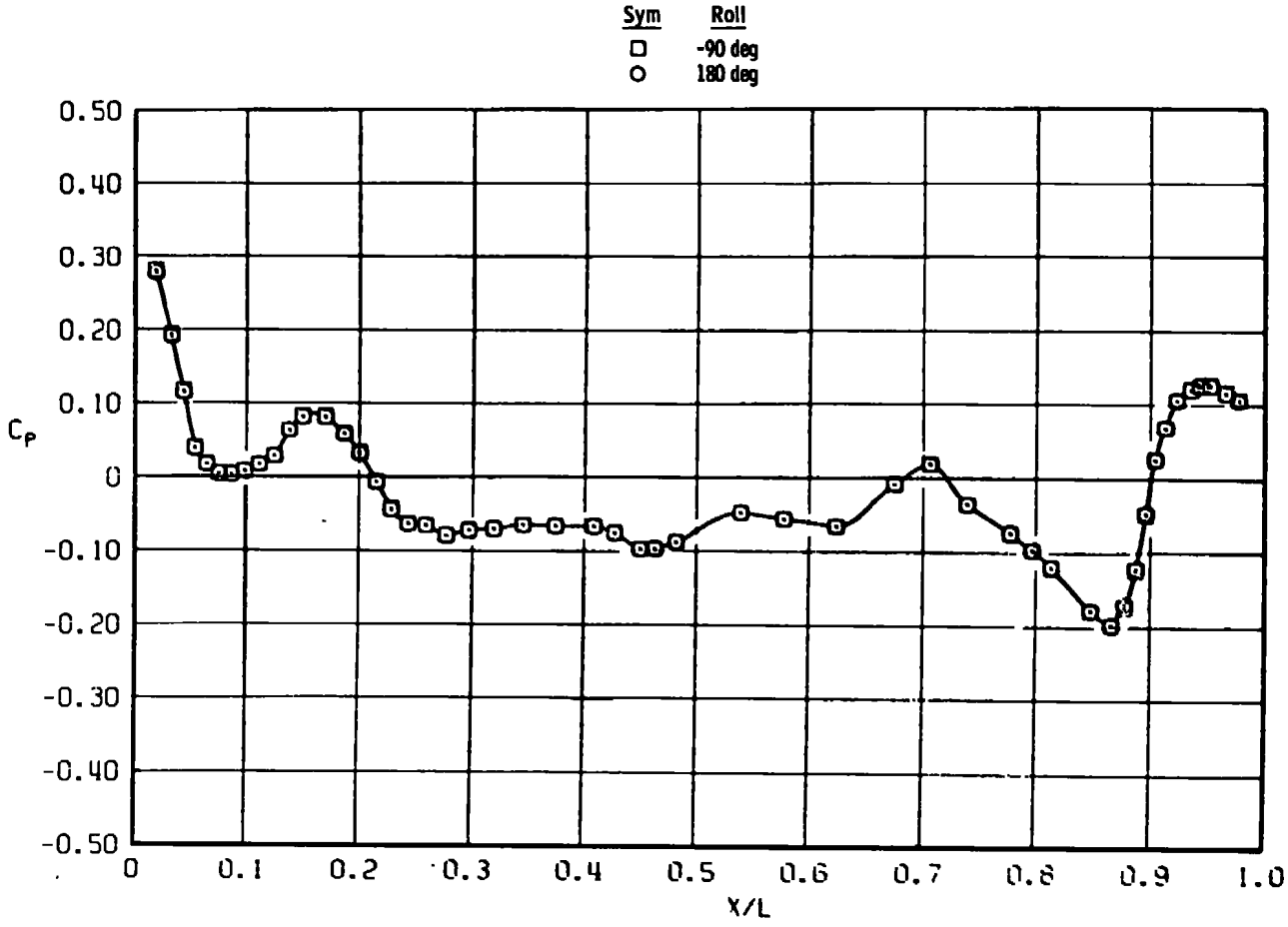
a. $\theta = 0$

Figure 14. Effect of roll on model pressure distribution for the contoured boattail configuration, $M_\infty = 0.60$, Re = 43 x 10^6.



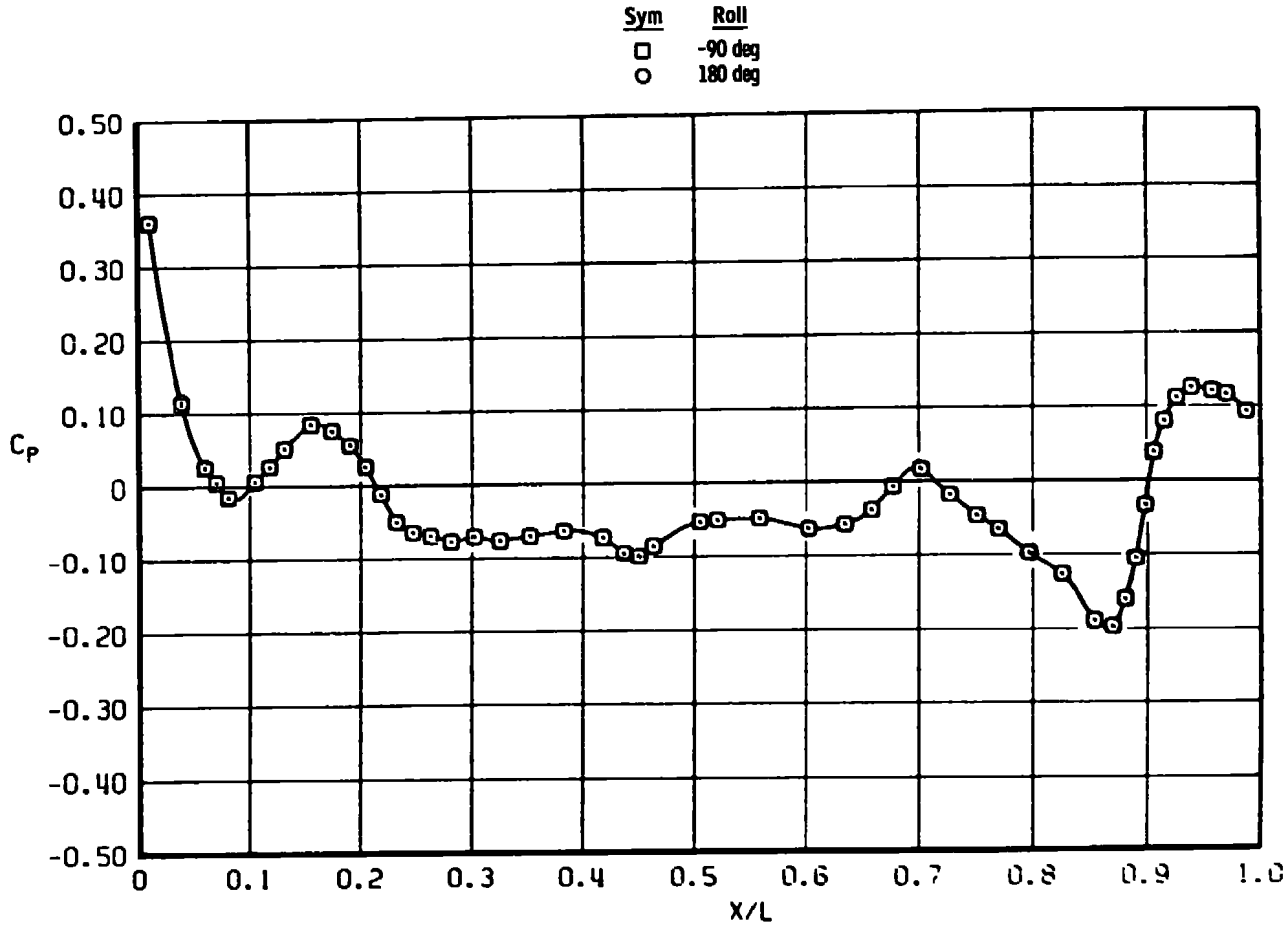
b. θ = 90 deg

Figure 14. Continued.



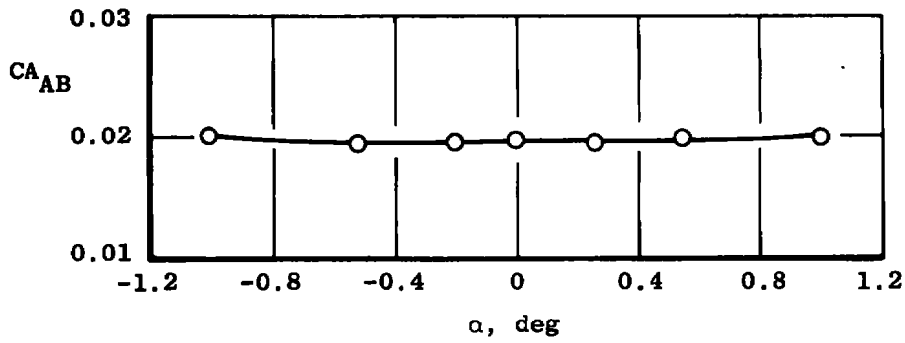
c. θ = 180 deg

Figure 14. Continued.

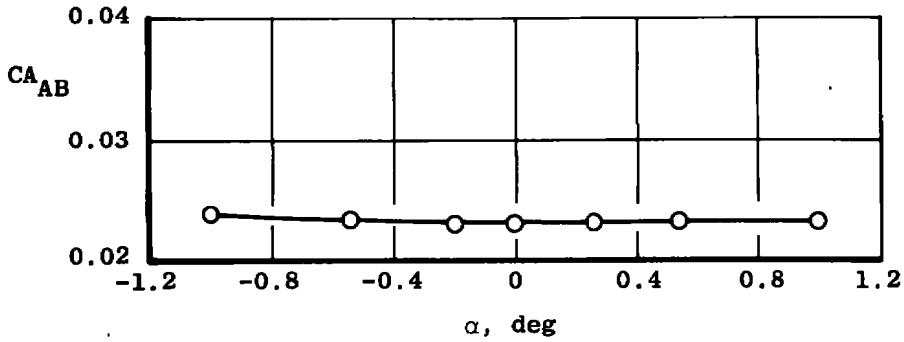


d. θ = 270 deg

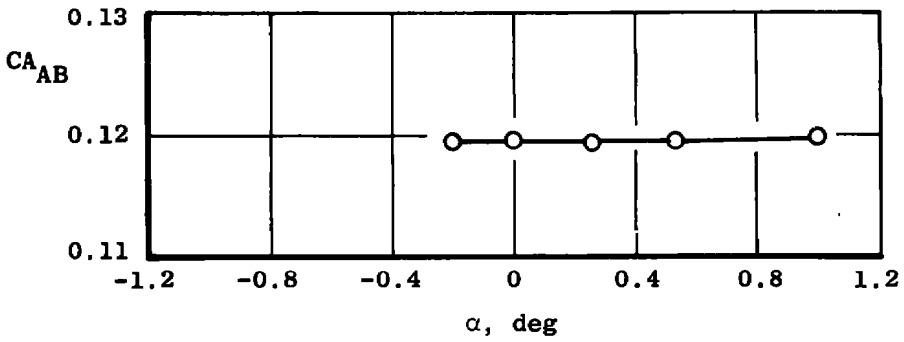
Figure 14. Concluded.



a. $M_\infty = 0.60$

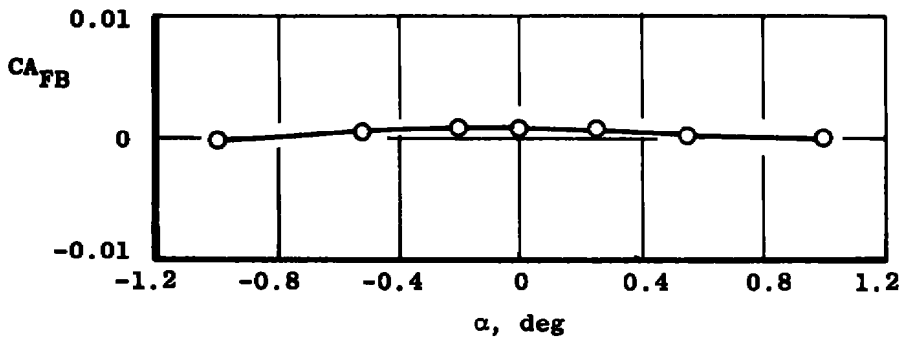


b. $M_\infty = 0.90$

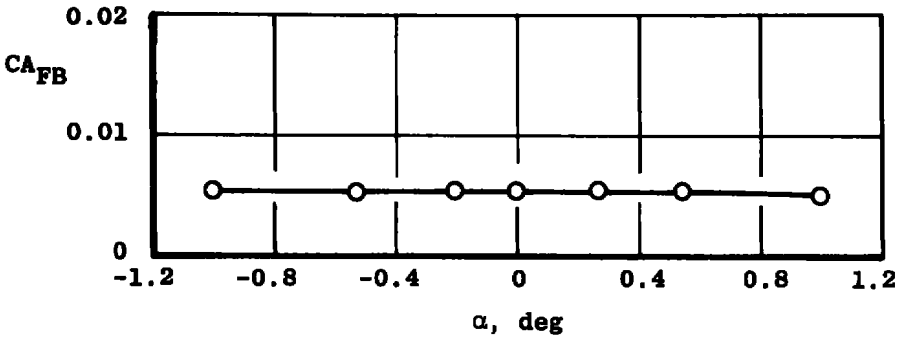


c. $M_\infty = 1.20$

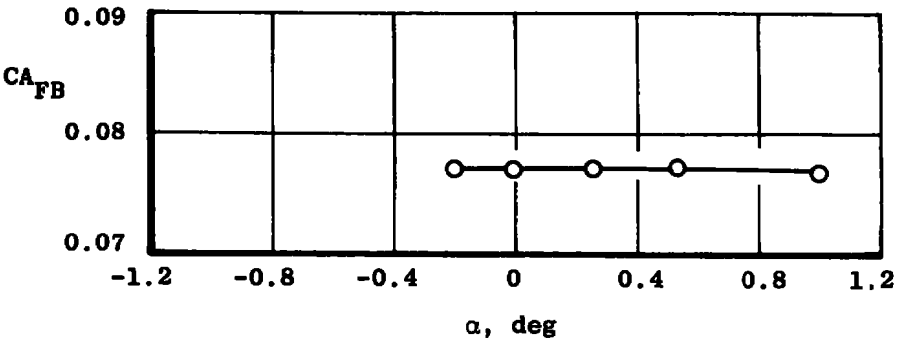
Figure 15. Effect of angle of attack on pressure-integrated afterbody axial-force coefficient for the contoured boattail configuration, Re = 43 x 10^6.



a. $M_\infty = 0.60$

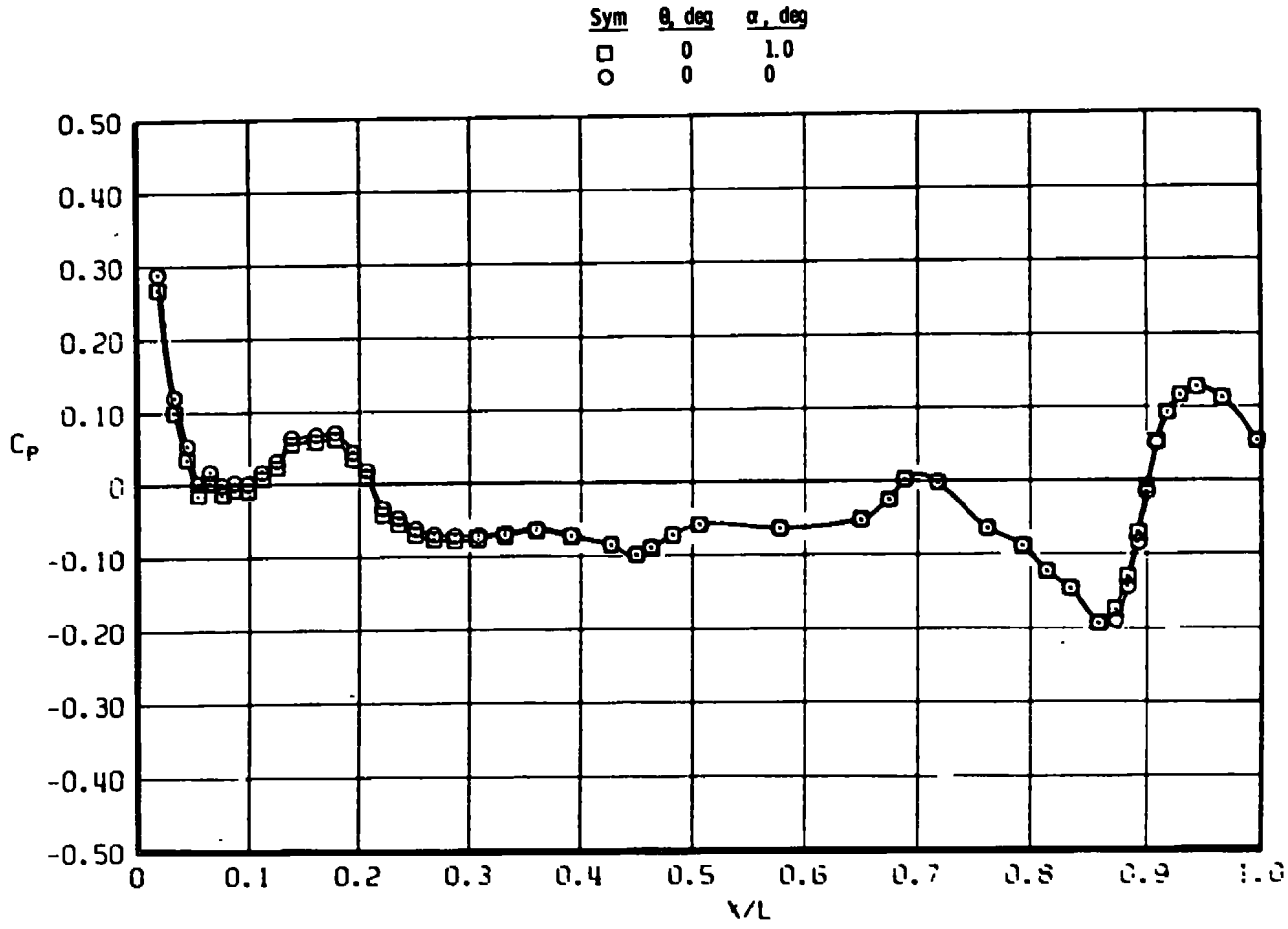


b. $M_\infty = 0.90$



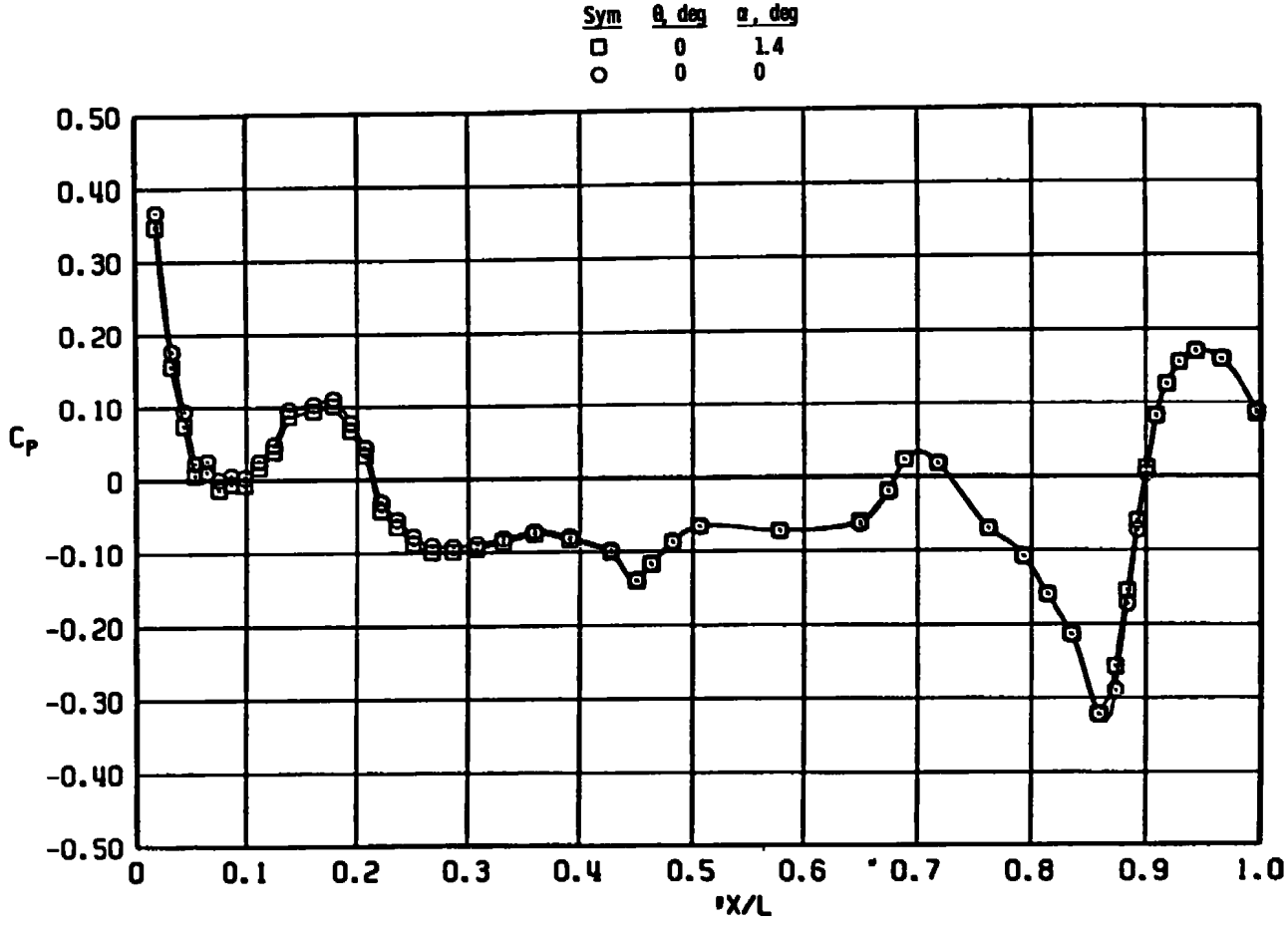
c. $M_\infty = 1.20$

Figure 16. Effect of angle of attack on pressure-integrated forebody axial-force coefficient for the contoured boattail configuration, Re = 43 x 10^6.



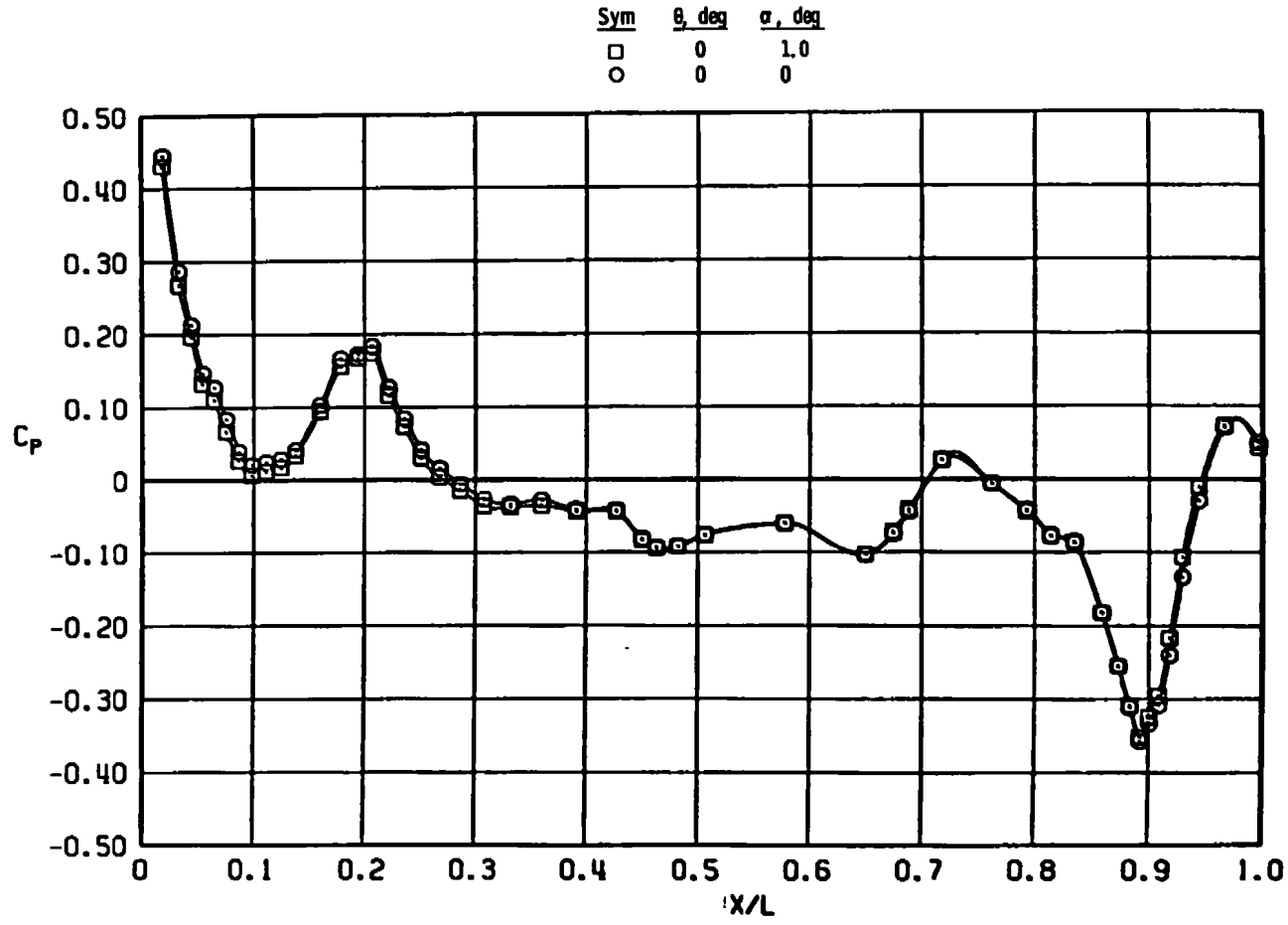
a. $M_\infty = 0.60$

Figure 17. Effect of angle of attack on model pressure distribution for the contoured boattail configuration, Re = 43 x 10^6.



b. $M_\infty = 0.90$

Figure 17. Continued.



c. $M_\infty = 1.20$

Figure 17. Concluded.

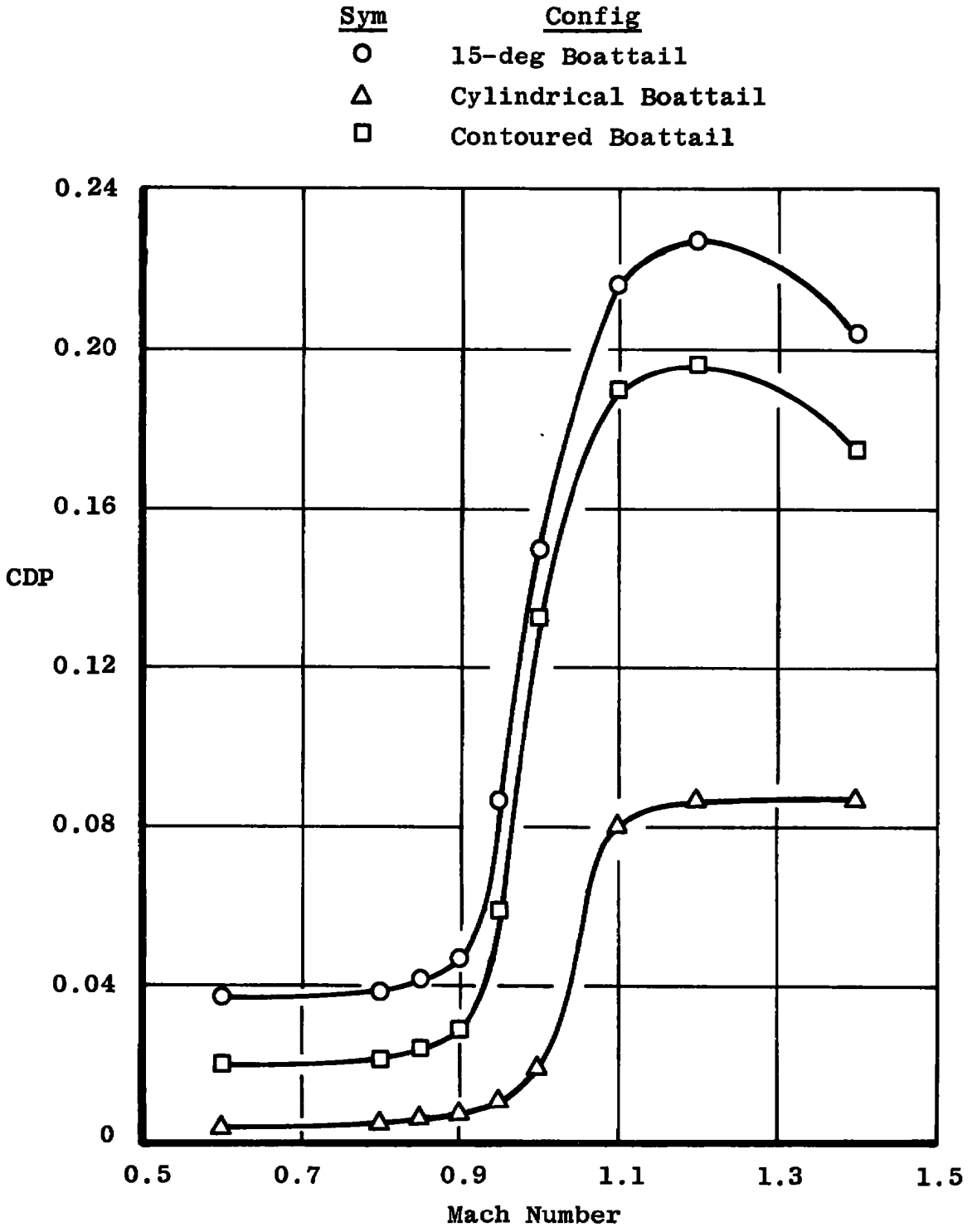


Figure 18. Model pressure drag coefficient versus Mach number, Re = 43 x 10^6.

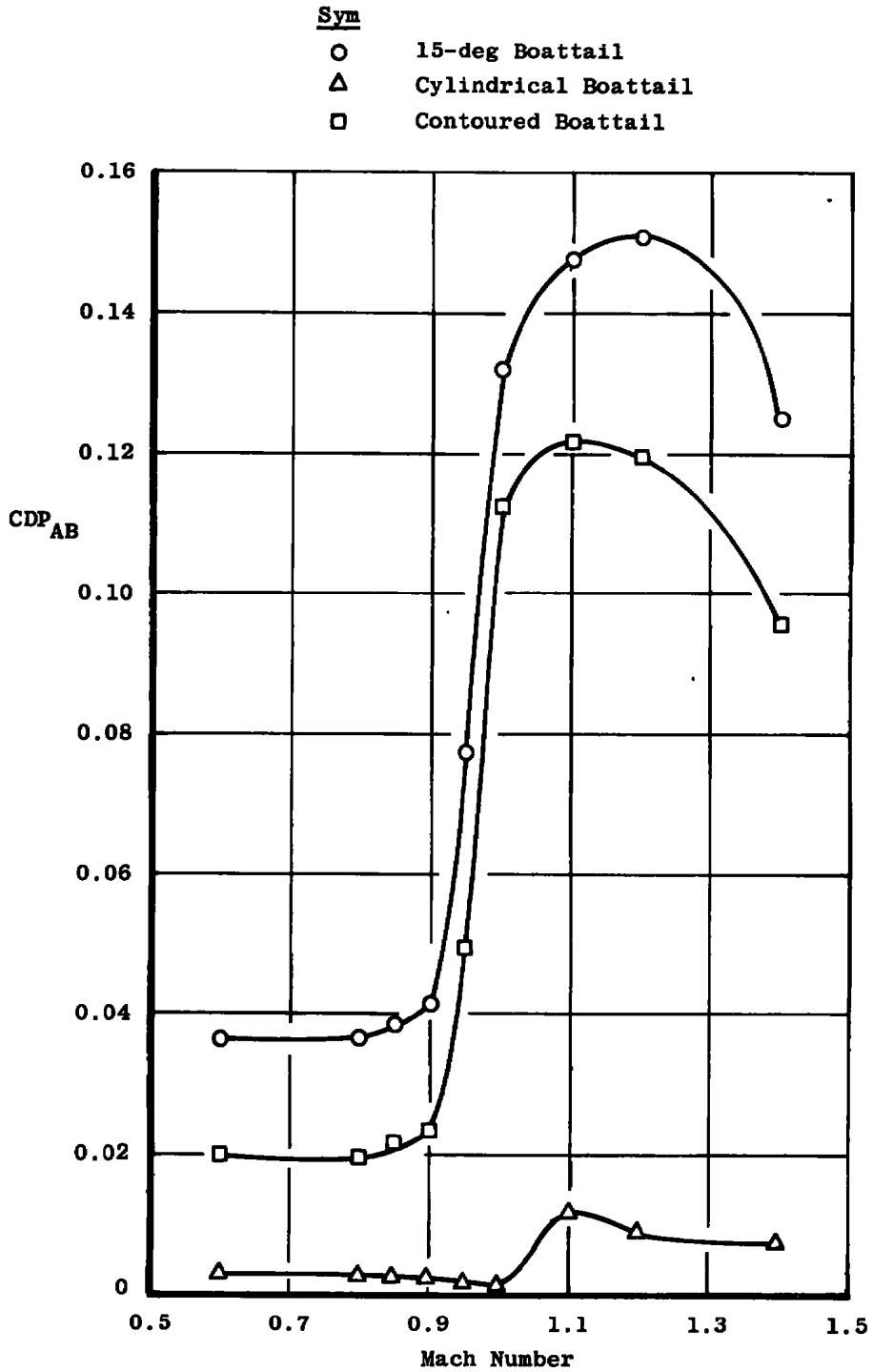


Figure 19. Afterbody pressure drag coefficient versus Mach number, Re = 43 x 10^6.

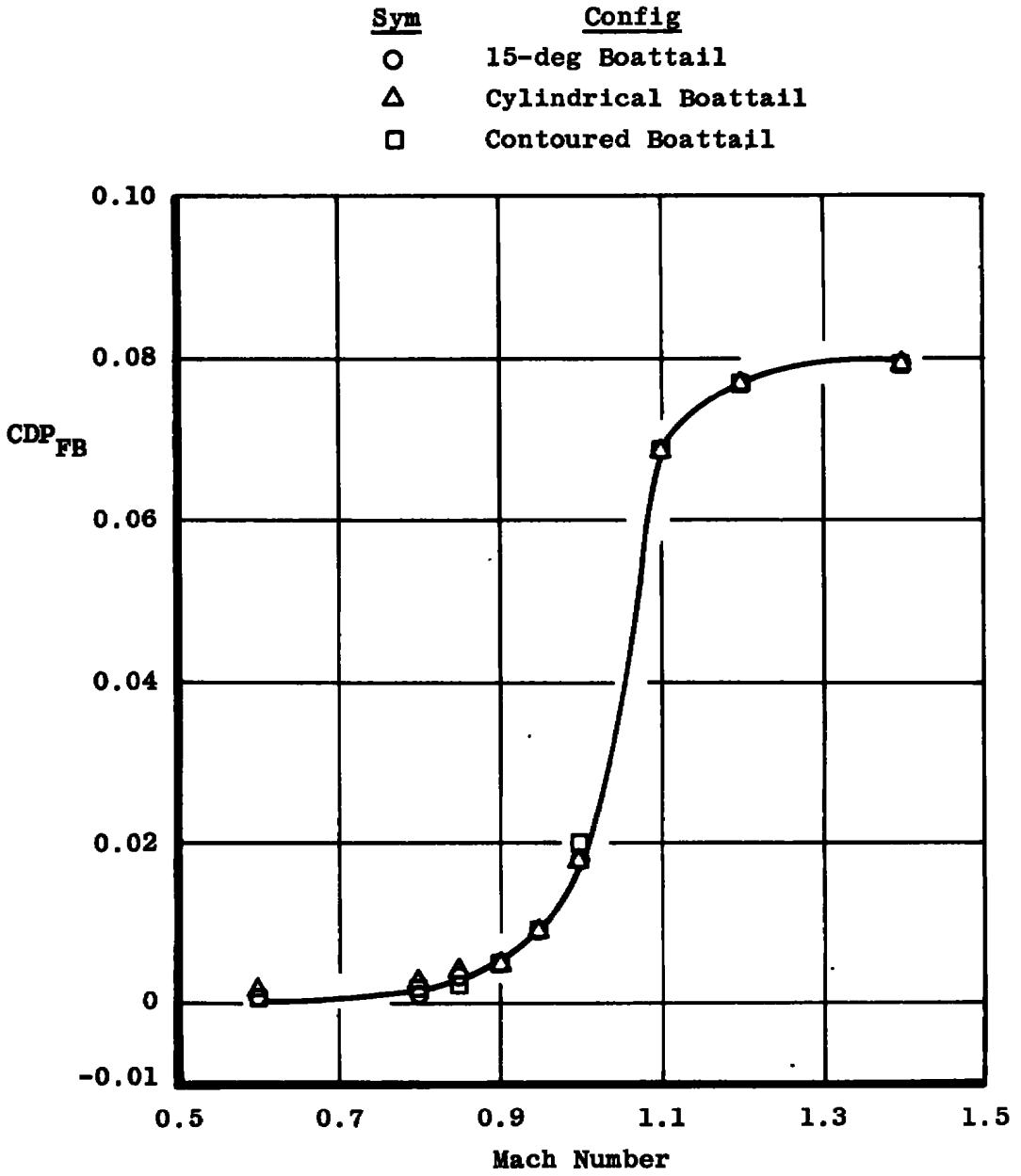
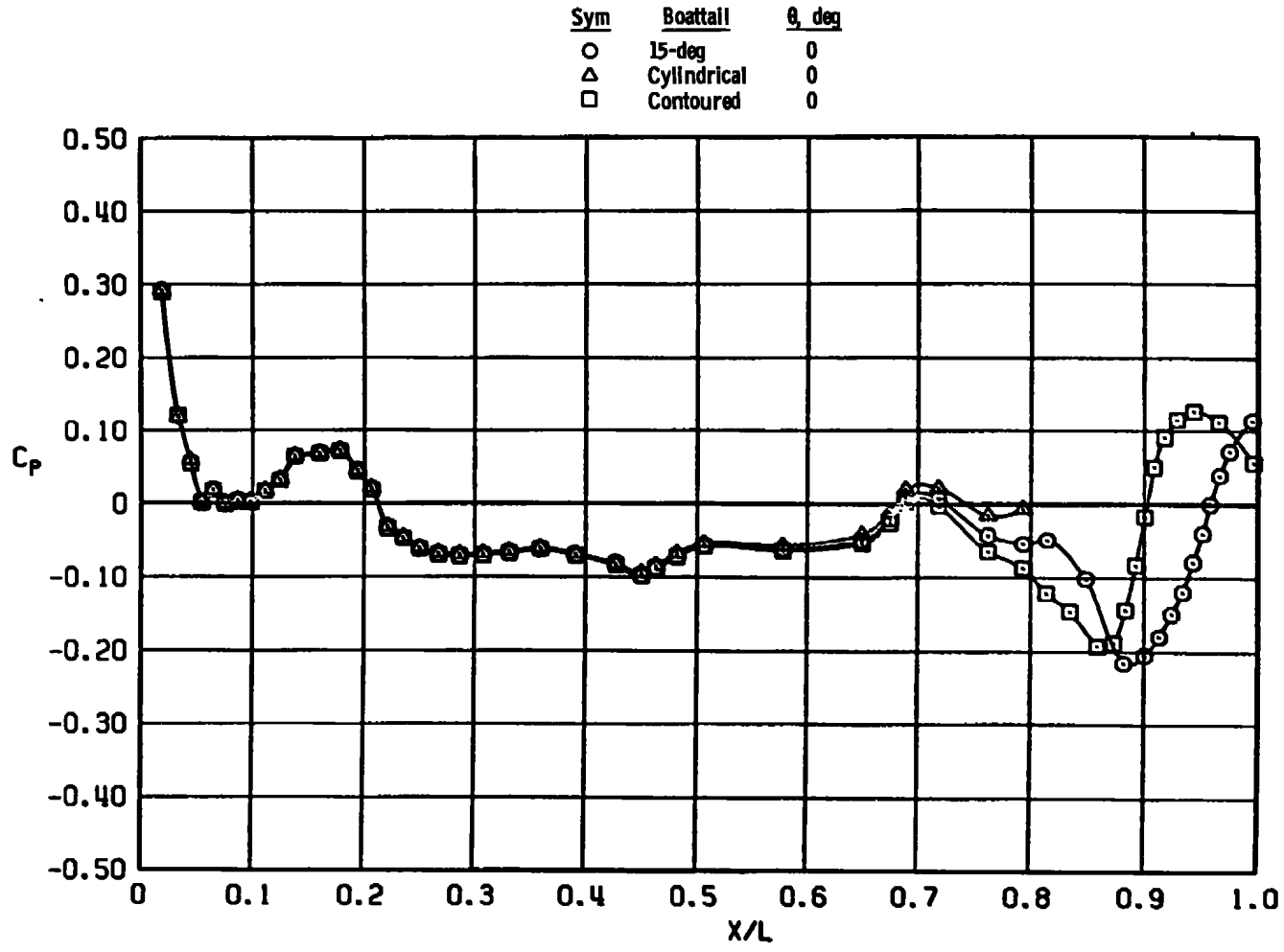
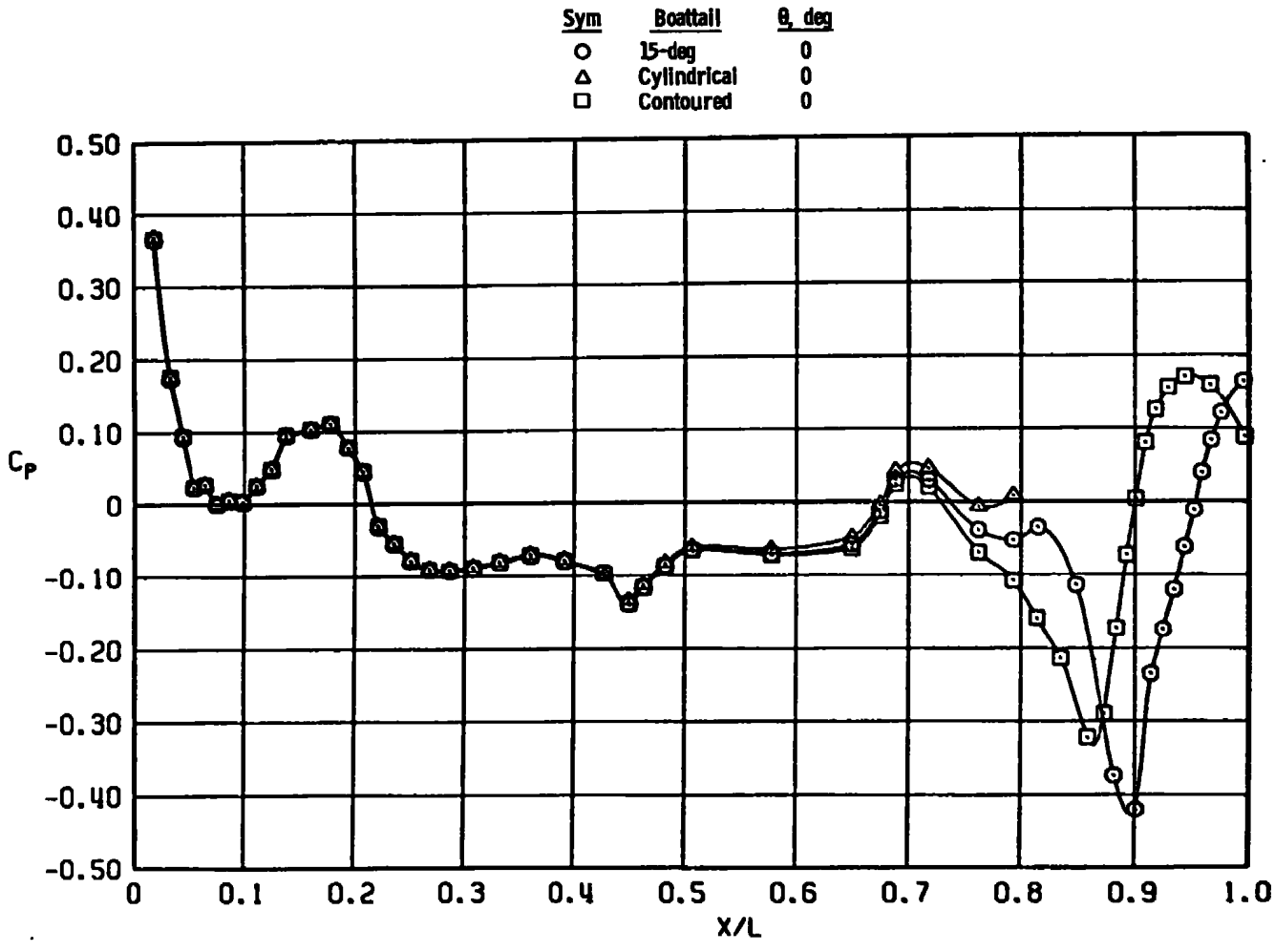


Figure 20. Forebody pressure drag coefficient versus Mach number, Re = 43 x 10^6.



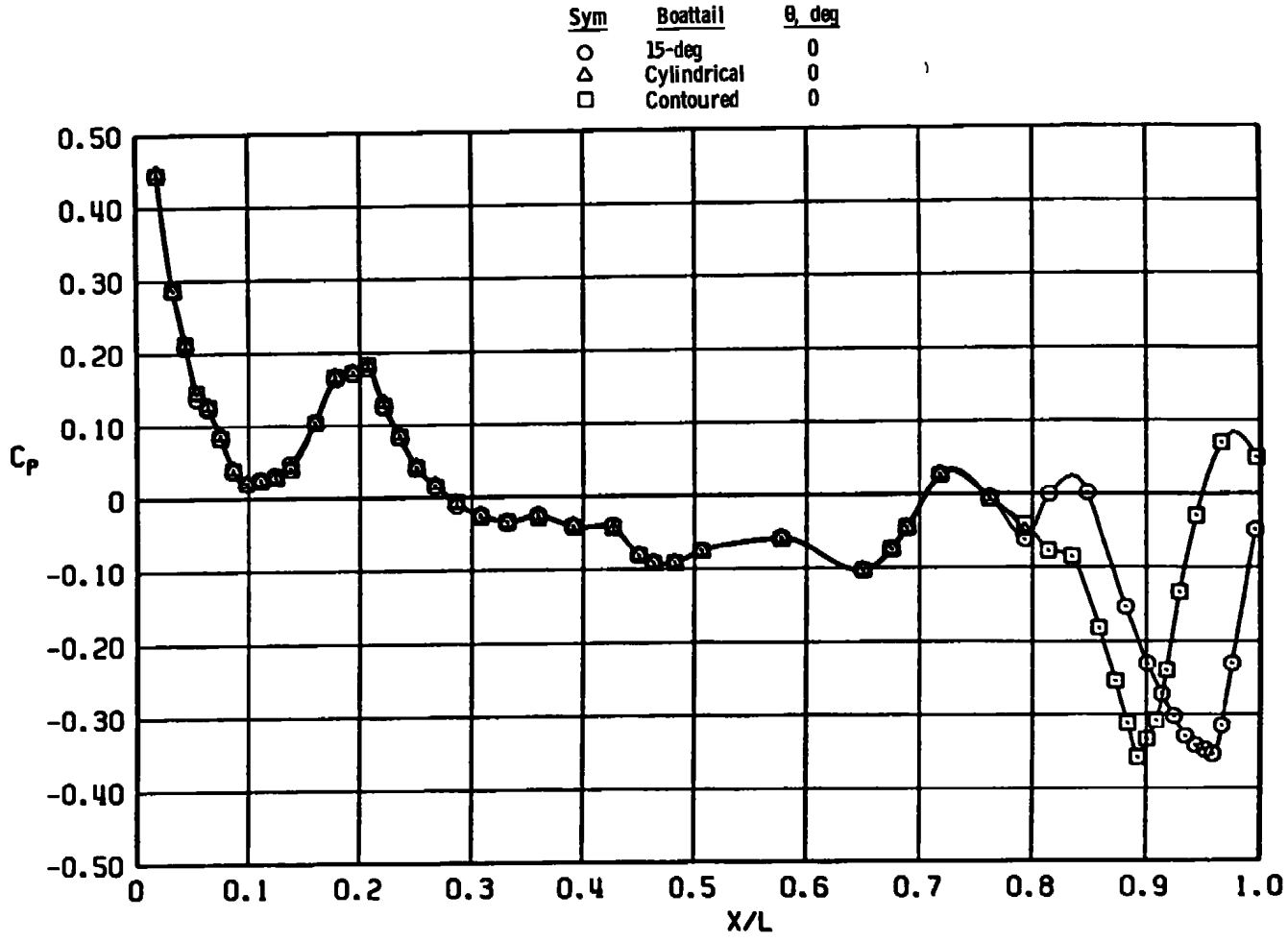
a. $M_\infty = 0.60$

Figure 21. Effect of afterbody geometry on model pressure distribution, Re = 43 x 10^6.



b. $M_\infty = 0.90$

Figure 21. Continued.



c. $M_\infty = 1.20$

Figure 21. Concluded.

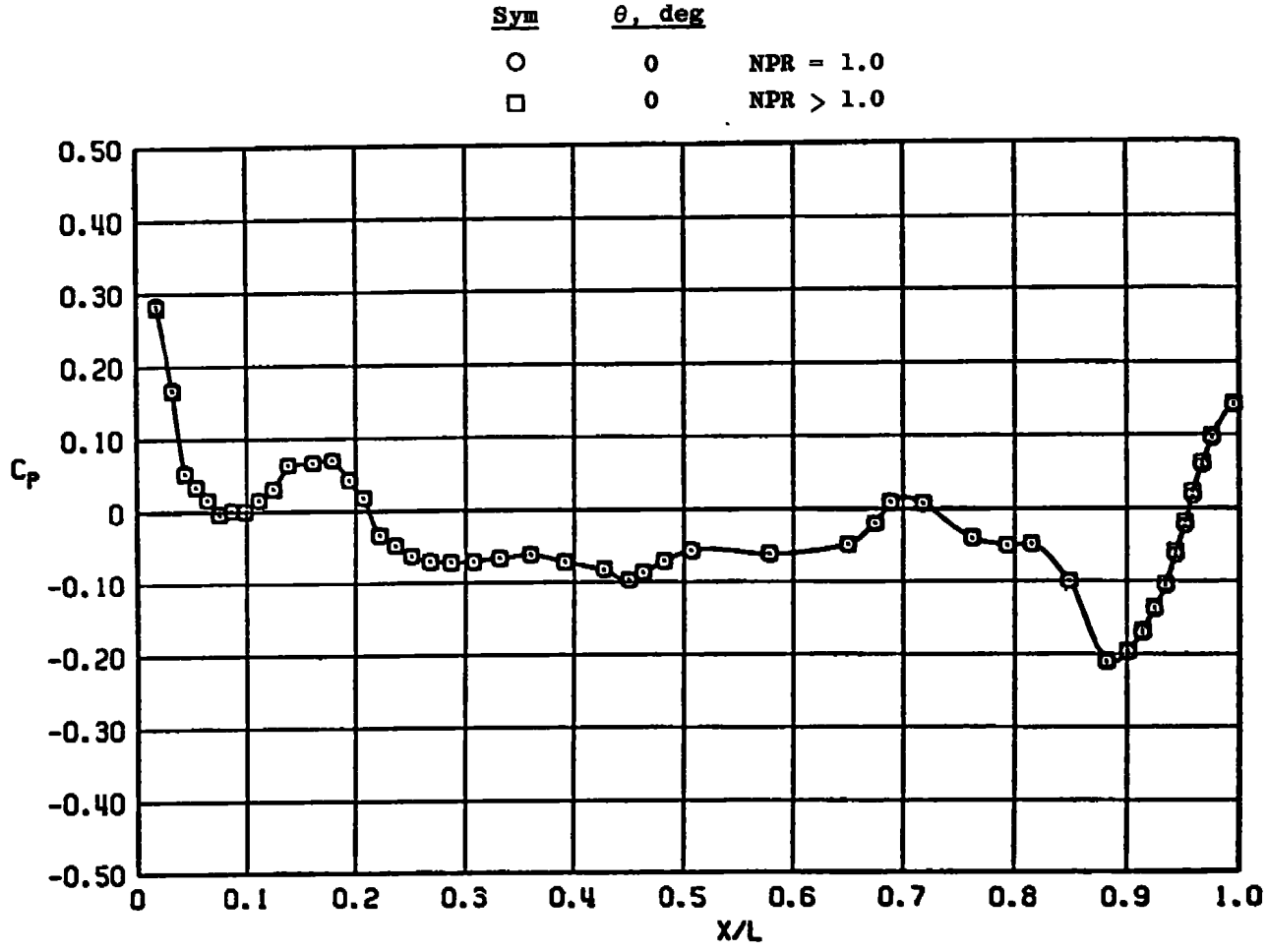


Figure 22. Effect of jet plume on model pressure distribution for the 15-deg boattail configuration, M_∞ = 0.60, Re = 43 x 10^6.

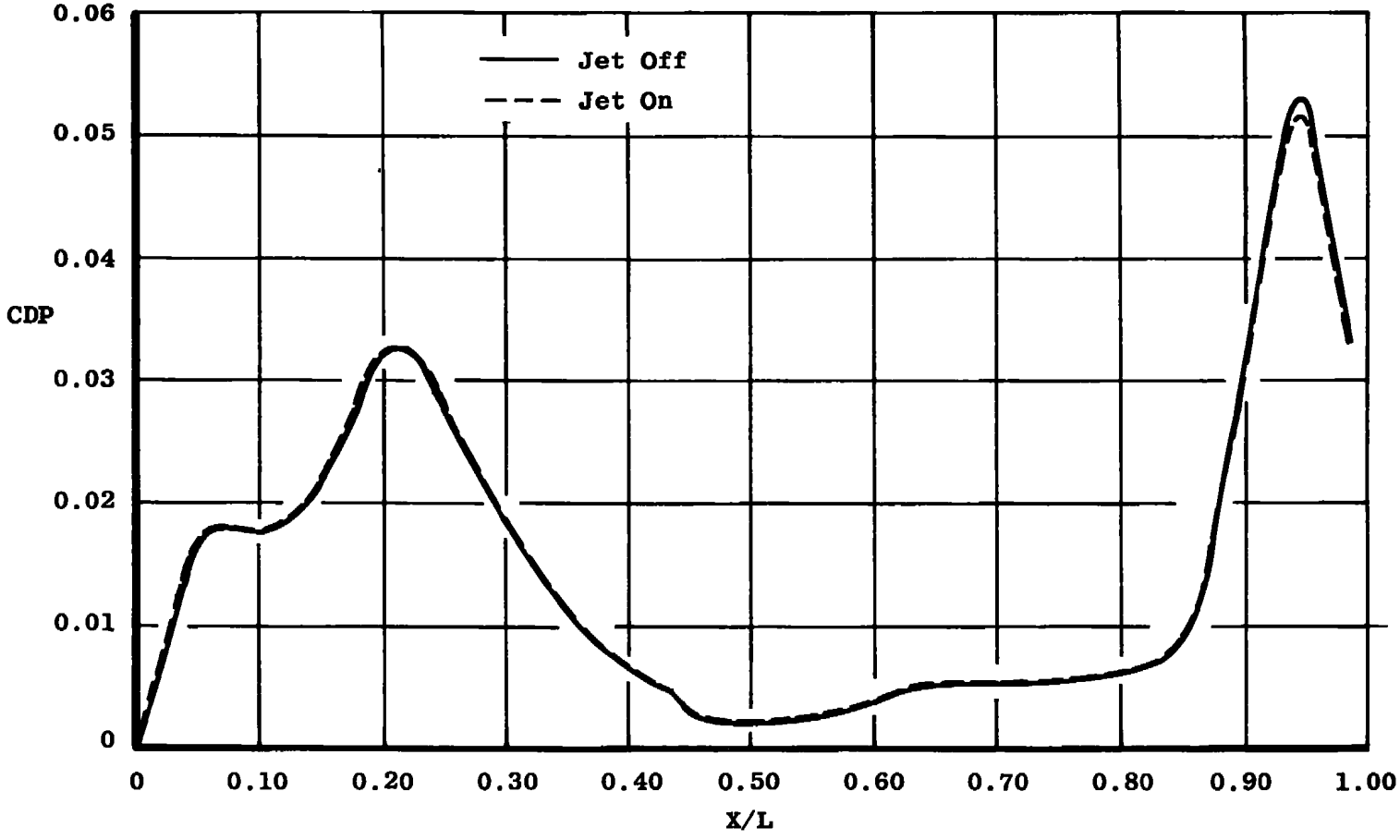
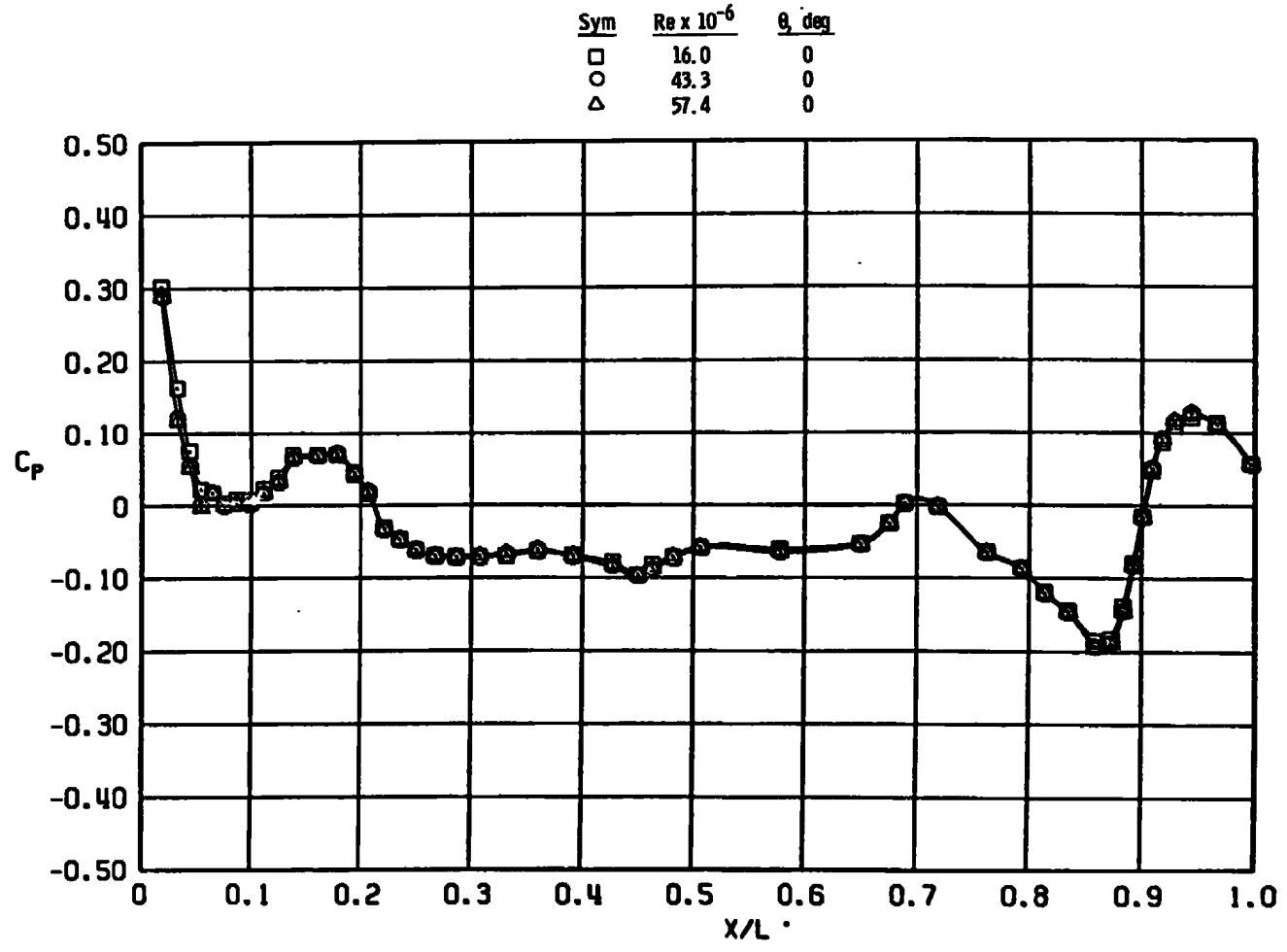
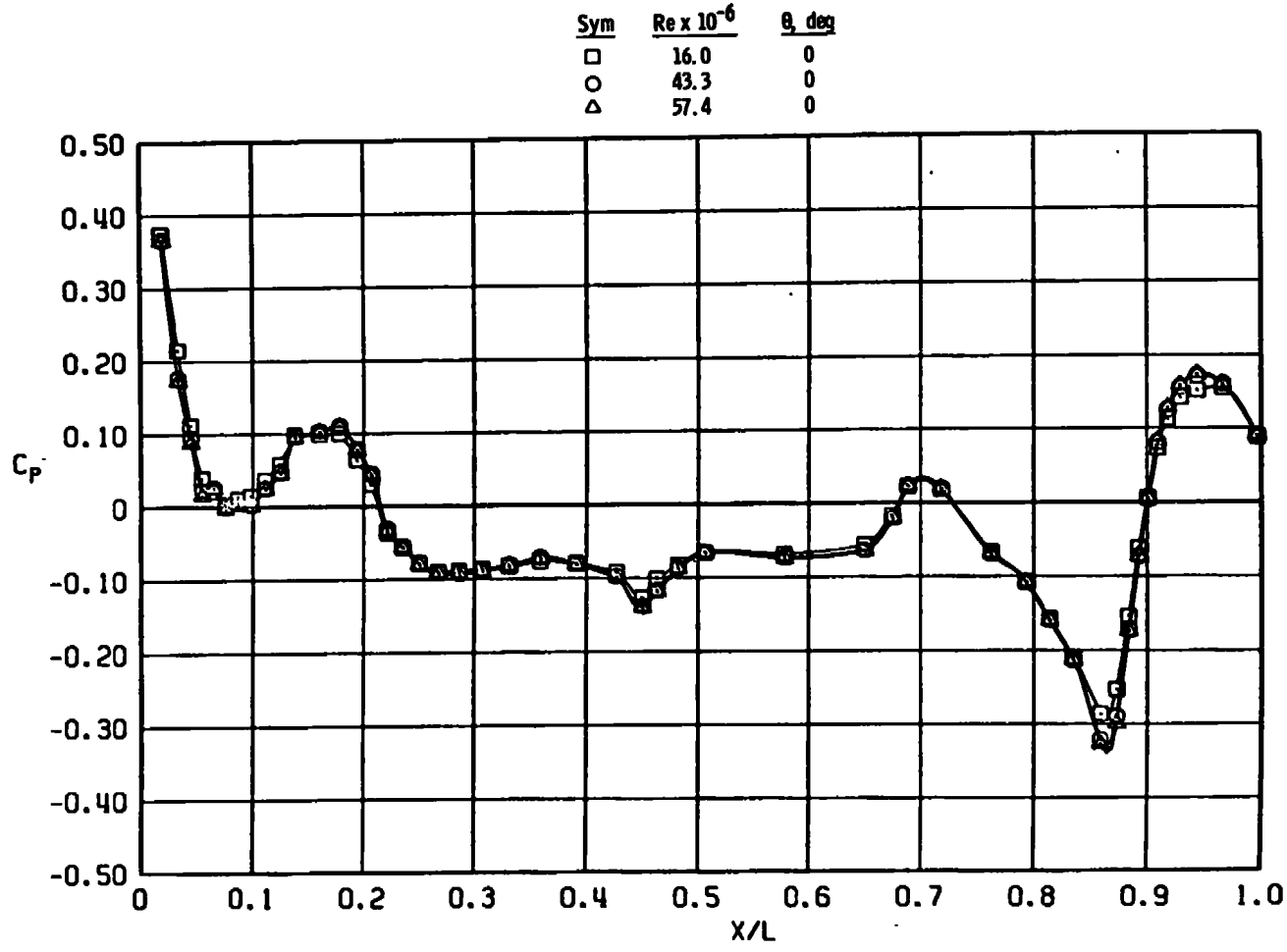


Figure 23. Pressure drag buildup on 15-deg boattail configuration caused by jet effects, $M_\infty = 0.60$, $Re = 43 \times 10^6$.



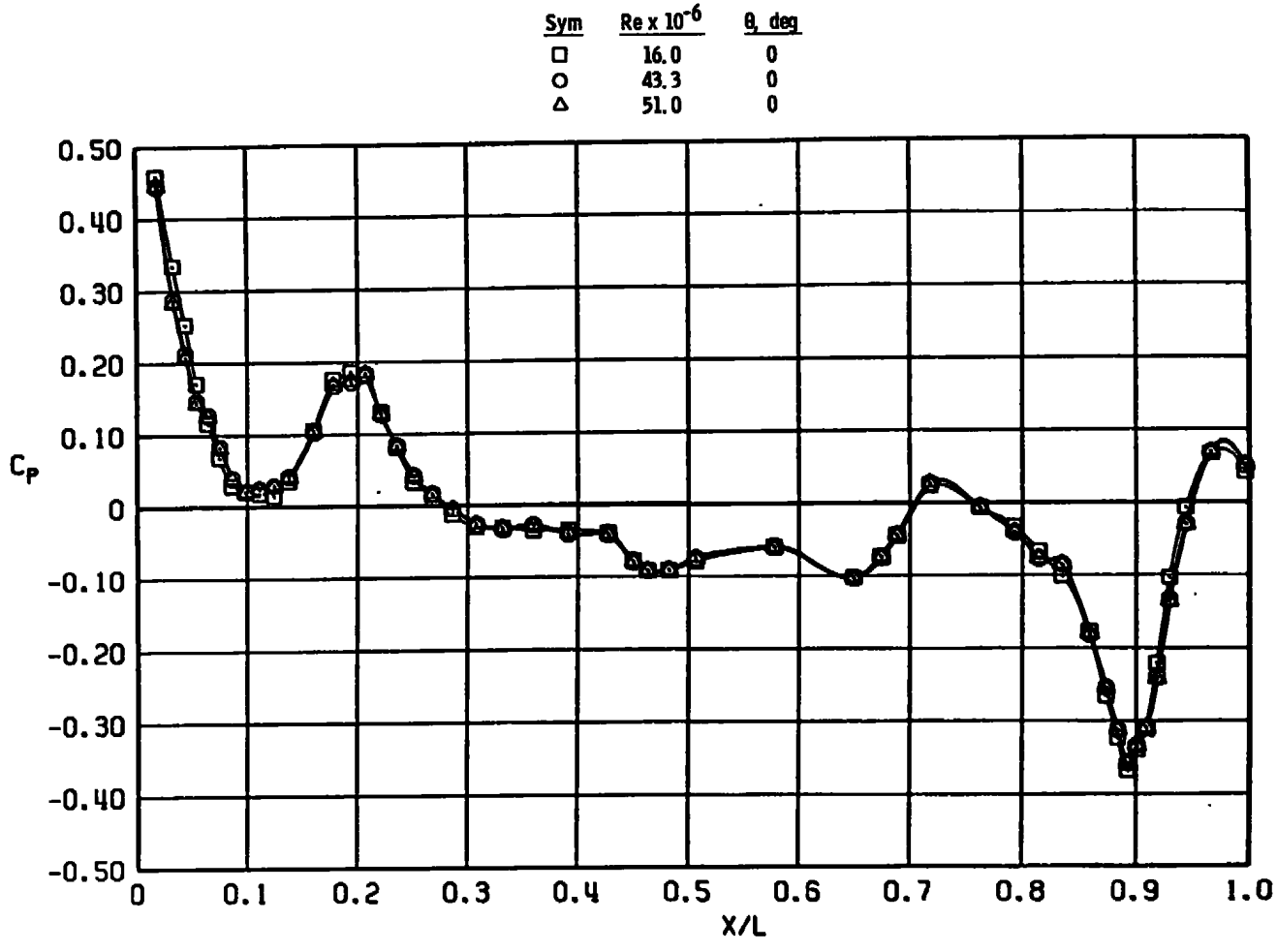
a. $M_\infty = 0.60$

Figure 24. Effect of Reynolds number on model pressure distribution for contoured boattail configuration.



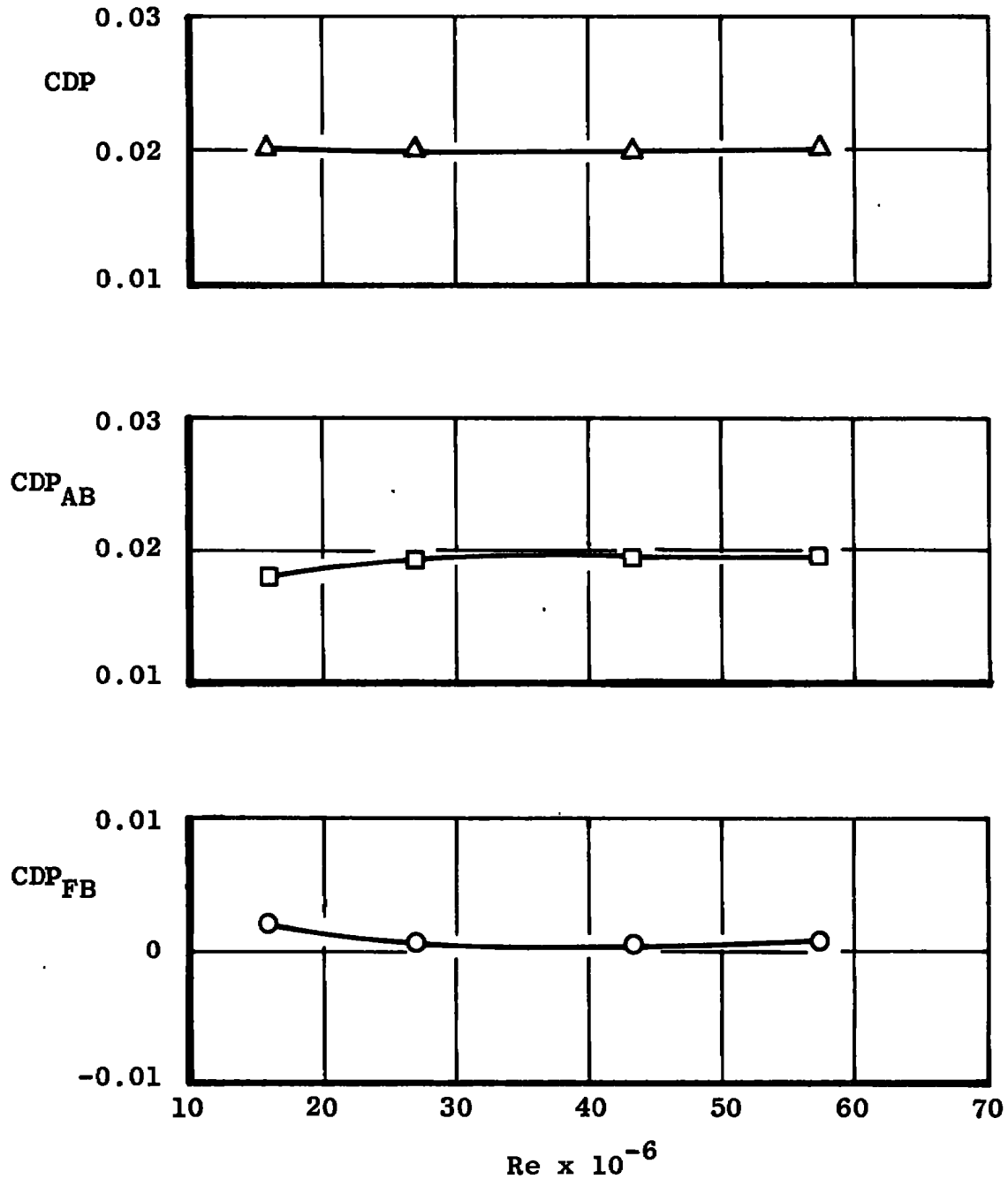
b. $M_{\infty} = 0.90$

Figure 24. Continued.



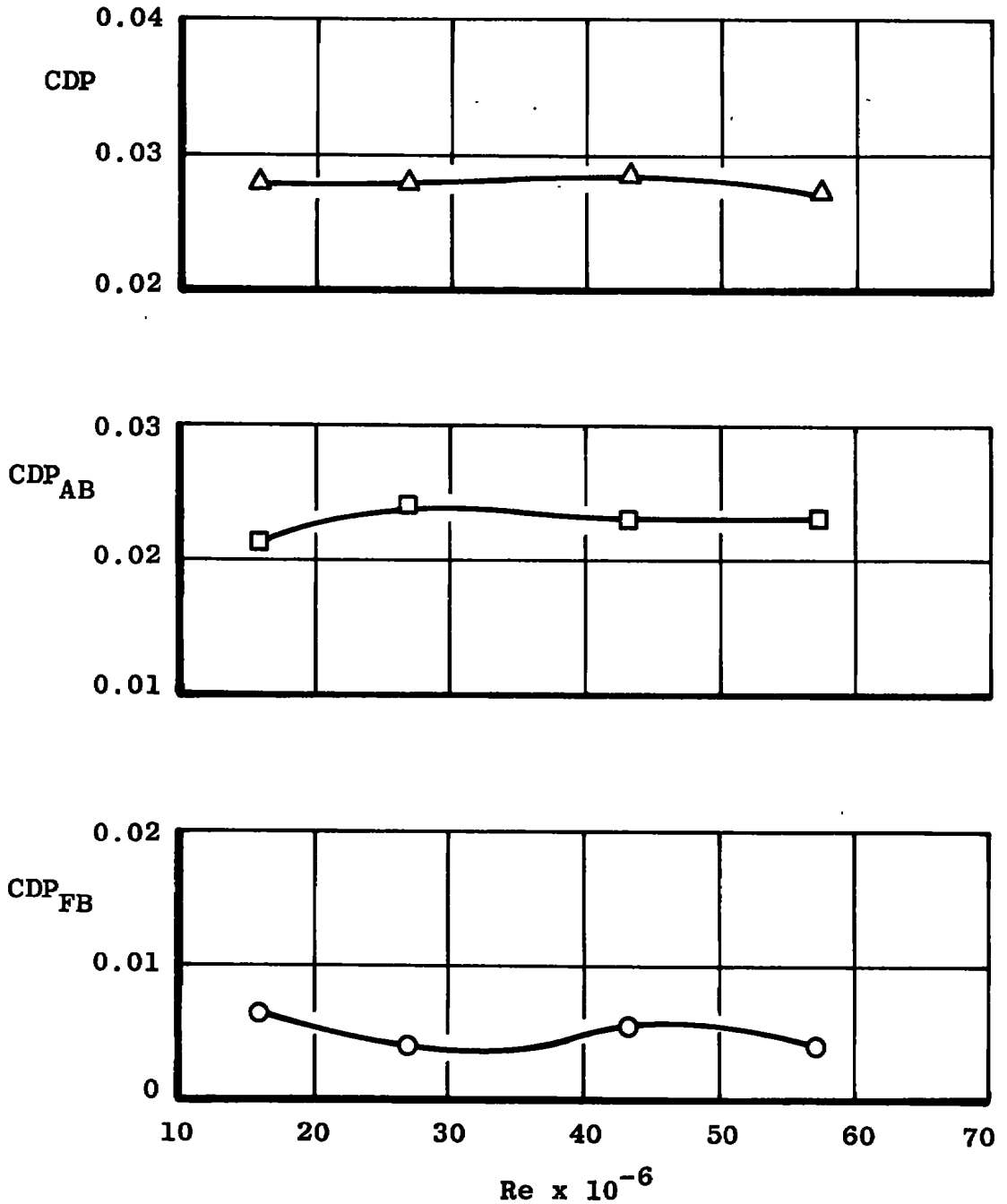
c. $M_\infty = 1.20$

Figure 24. Concluded.



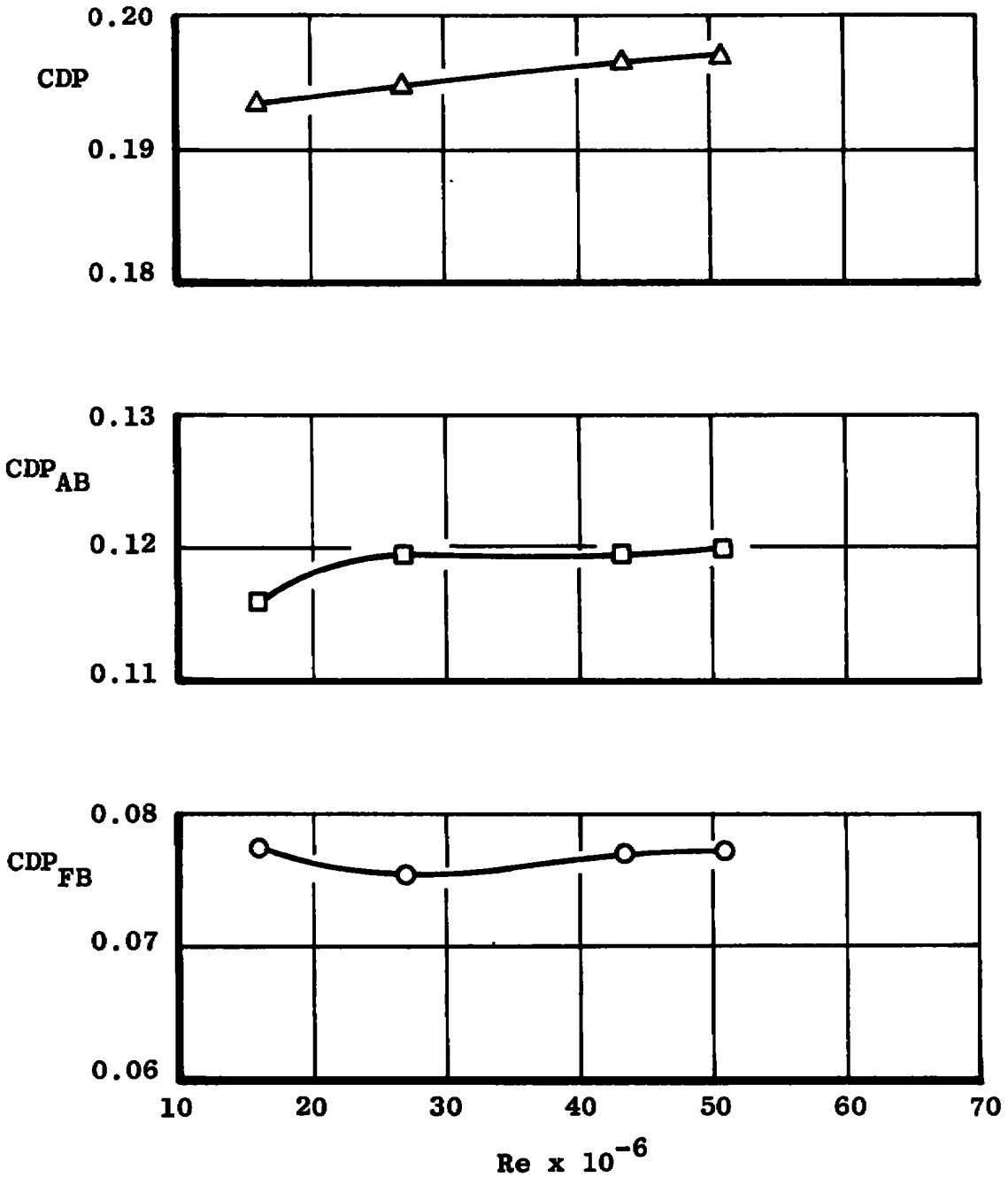
a. $M_\infty = 0.60$

Figure 25. Pressure drag coefficients versus Reynolds number for the contoured boattail configuration.



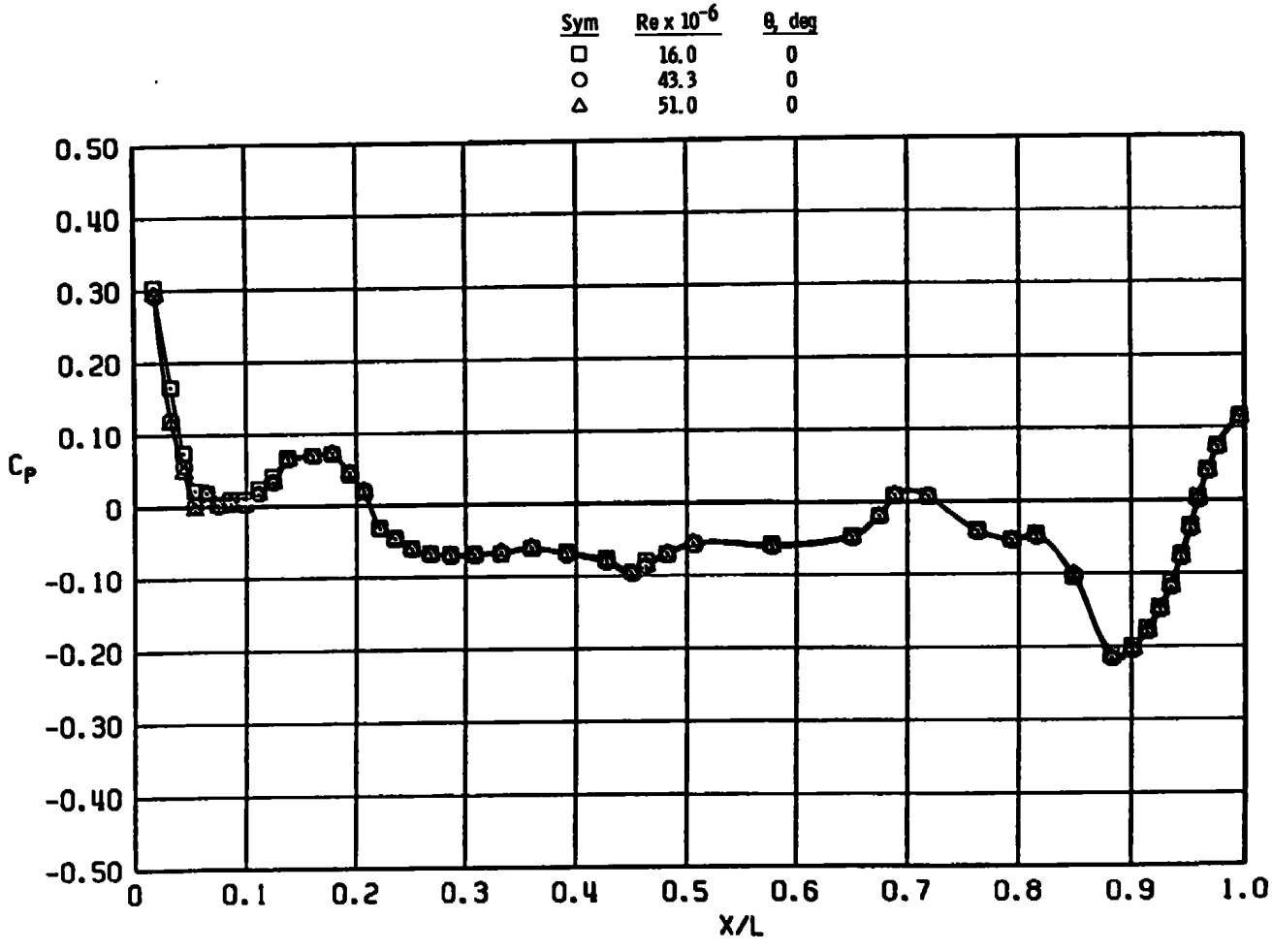
b. $M_\infty = 0.90$

Figure 25. Continued.



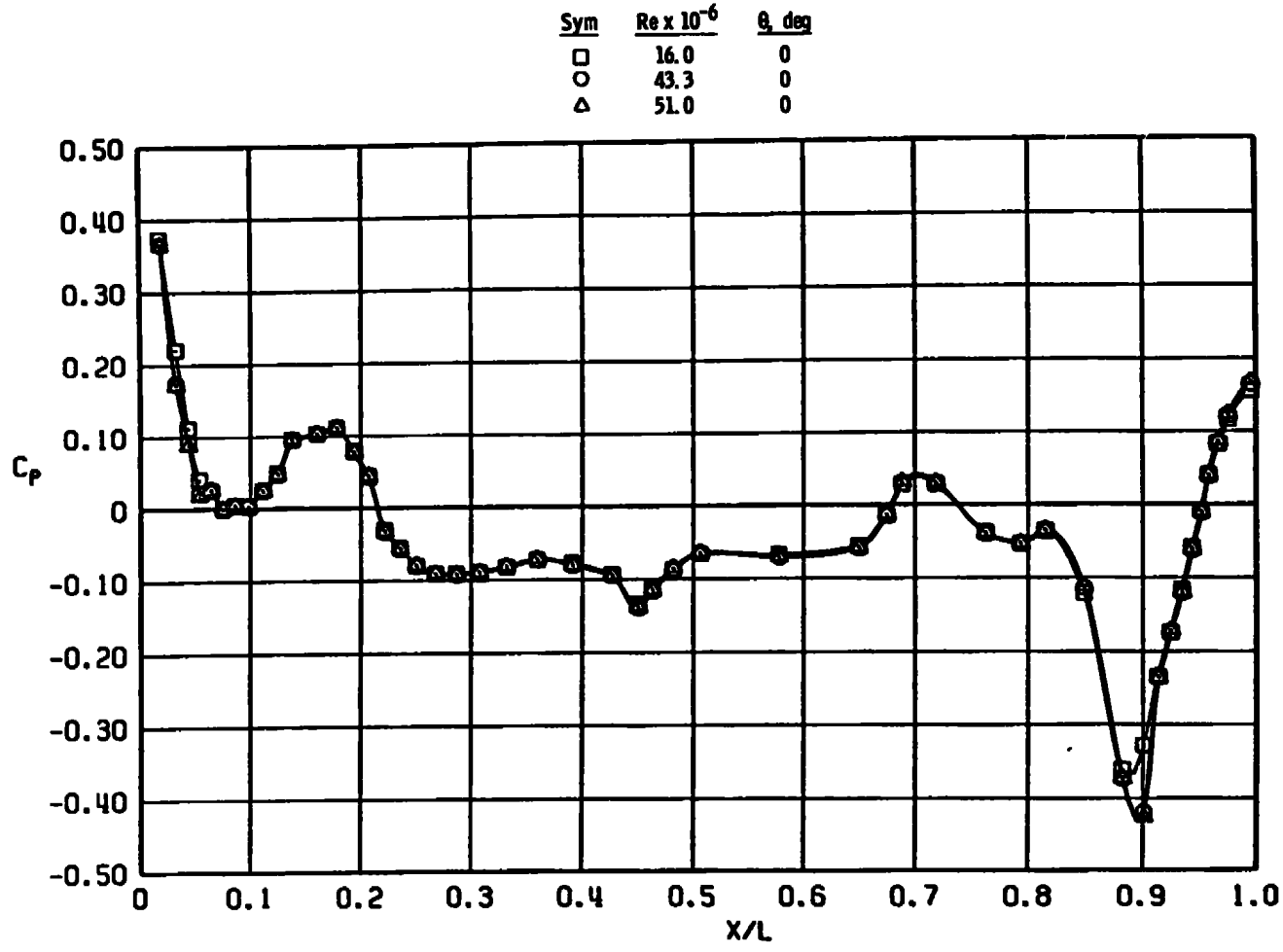
c. $M_\infty = 1.20$

Figure 25. Concluded.



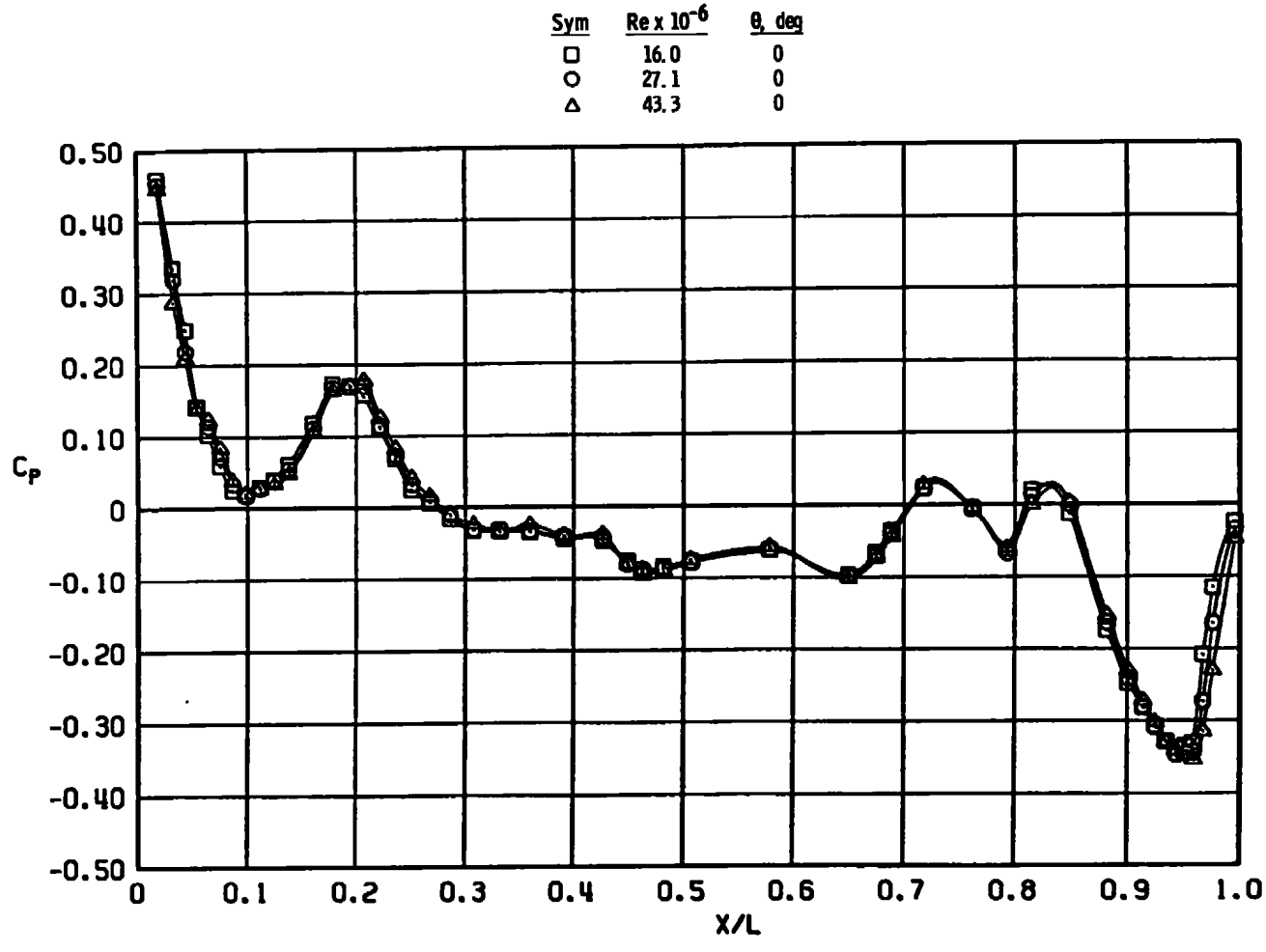
a. $M_\infty = 0.60$

Figure 26. Effect of Reynolds number on model pressure distribution of 15-deg boattail configuration.



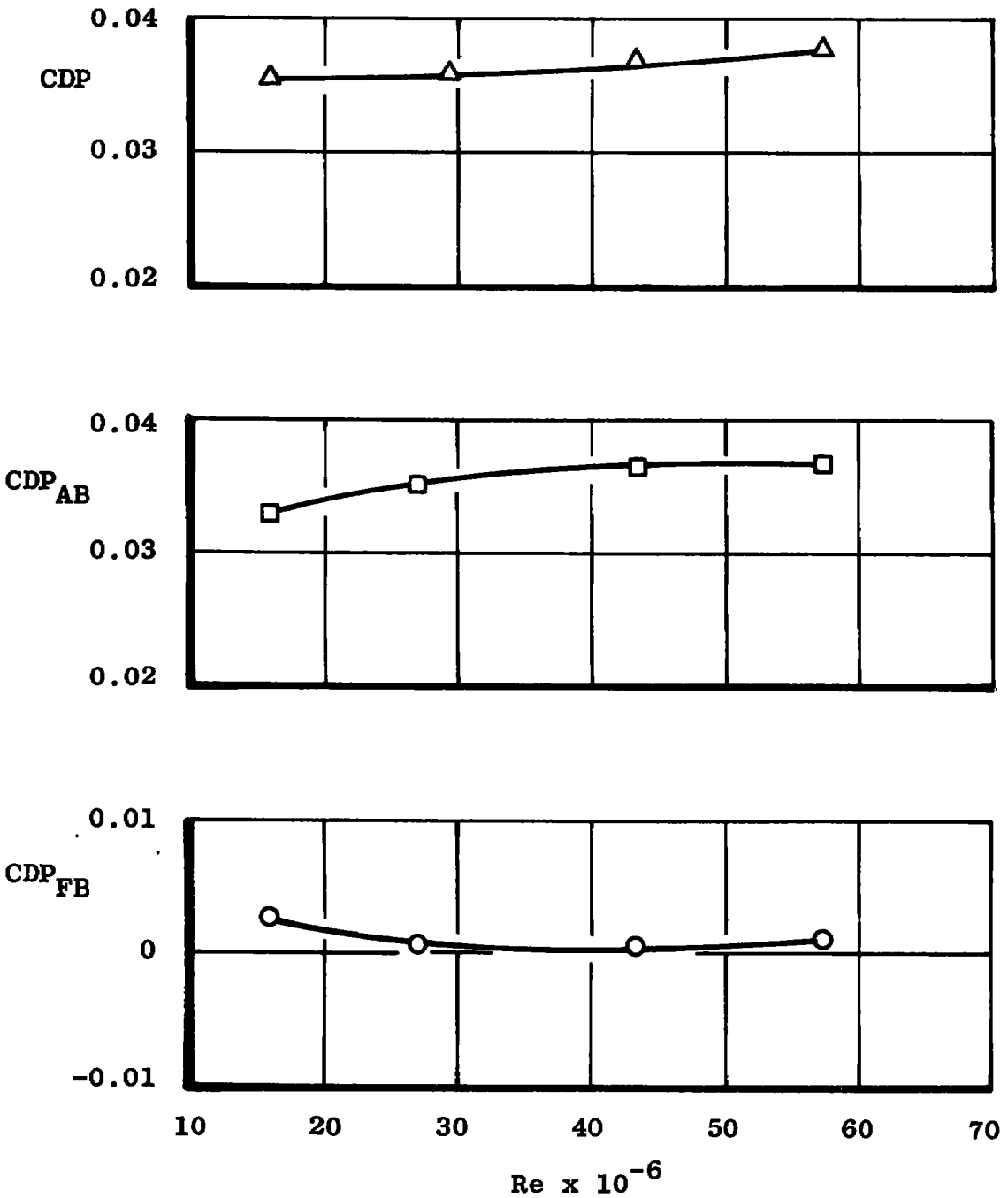
b. $M_\infty = 0.90$

Figure 26. Continued.



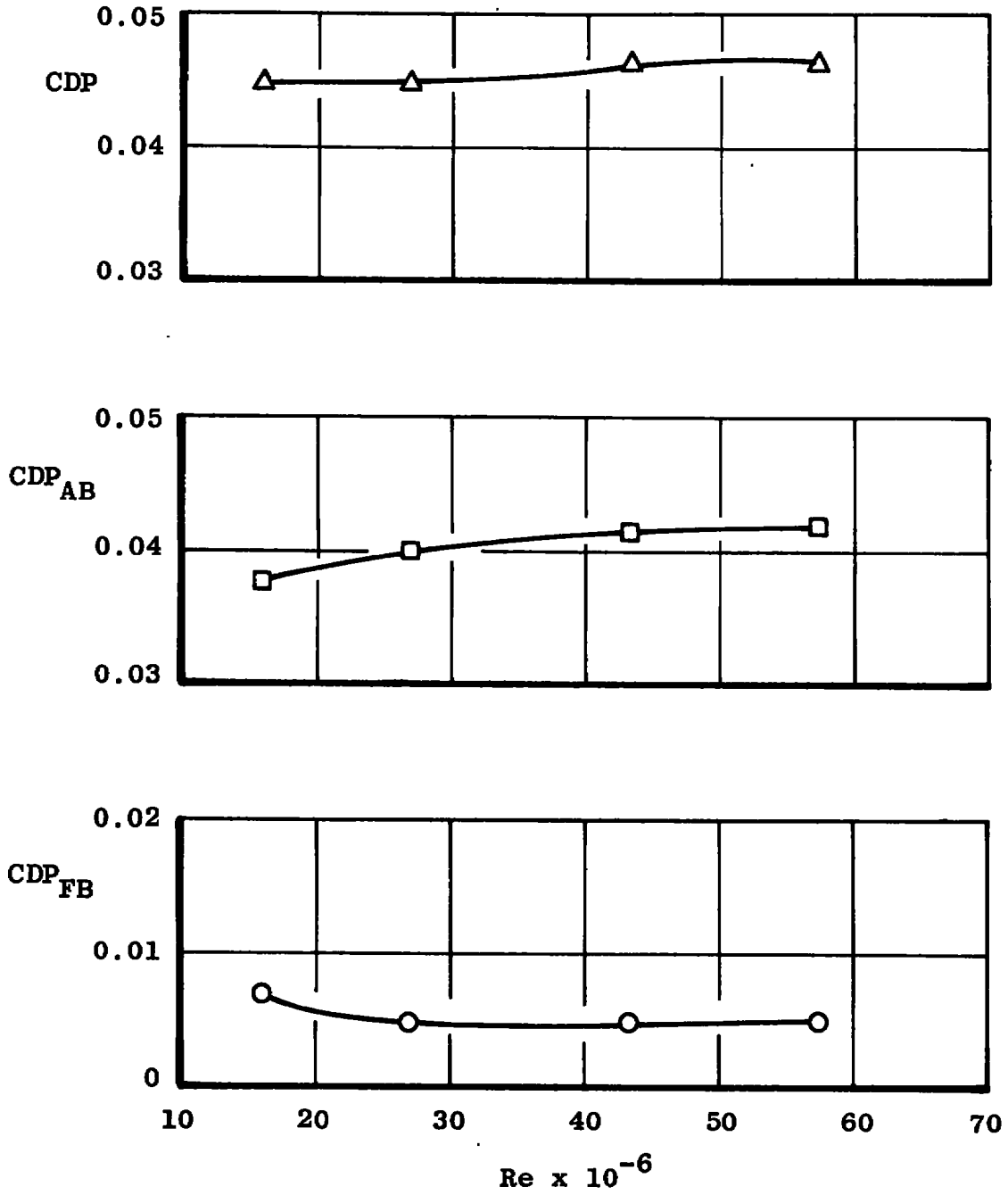
c. $M_\infty = 1.20$

Figure 26. Concluded.



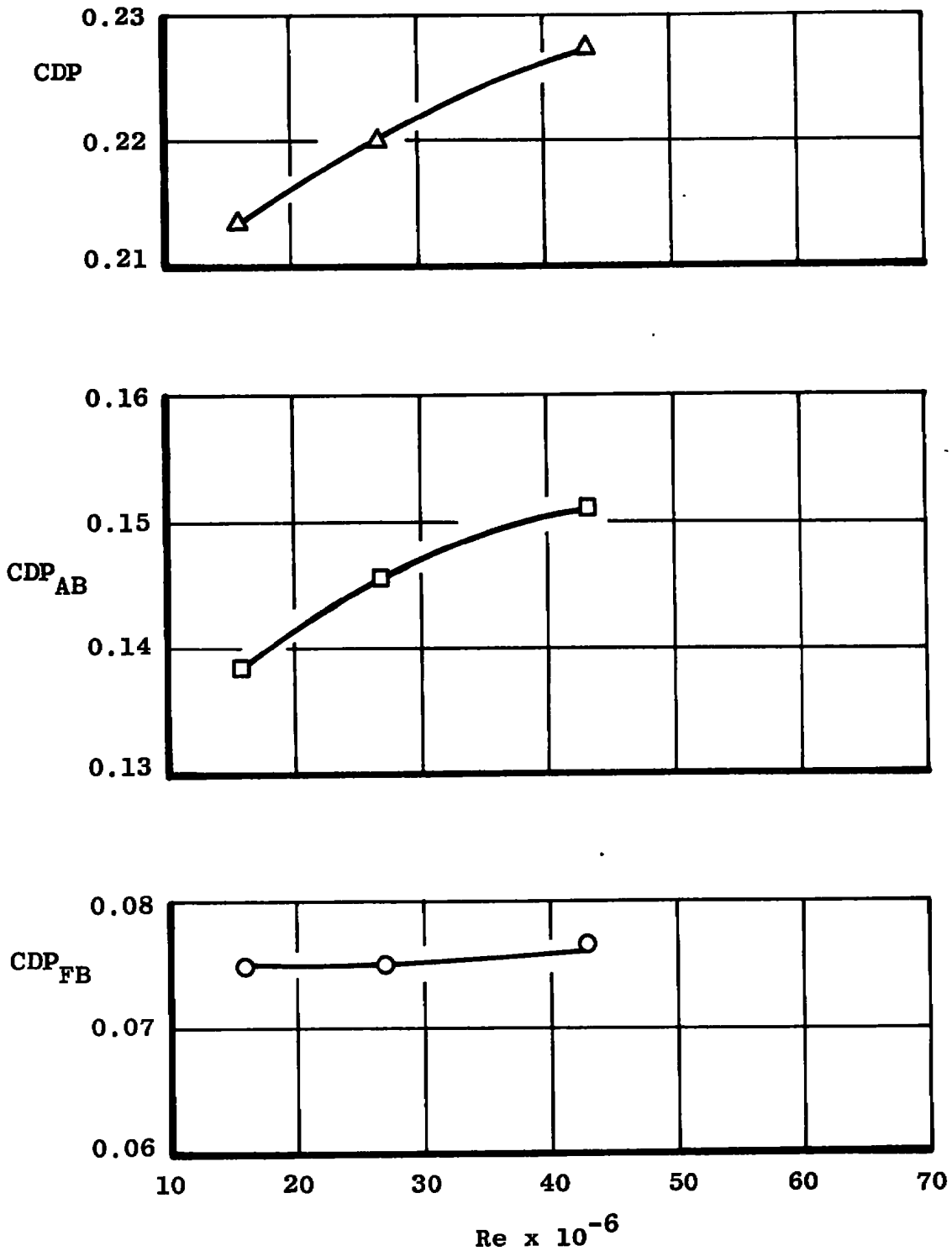
a. $M_\infty = 0.60$

Figure 27. Pressure drag coefficients versus Reynolds number for the 15-deg boattail configuration.

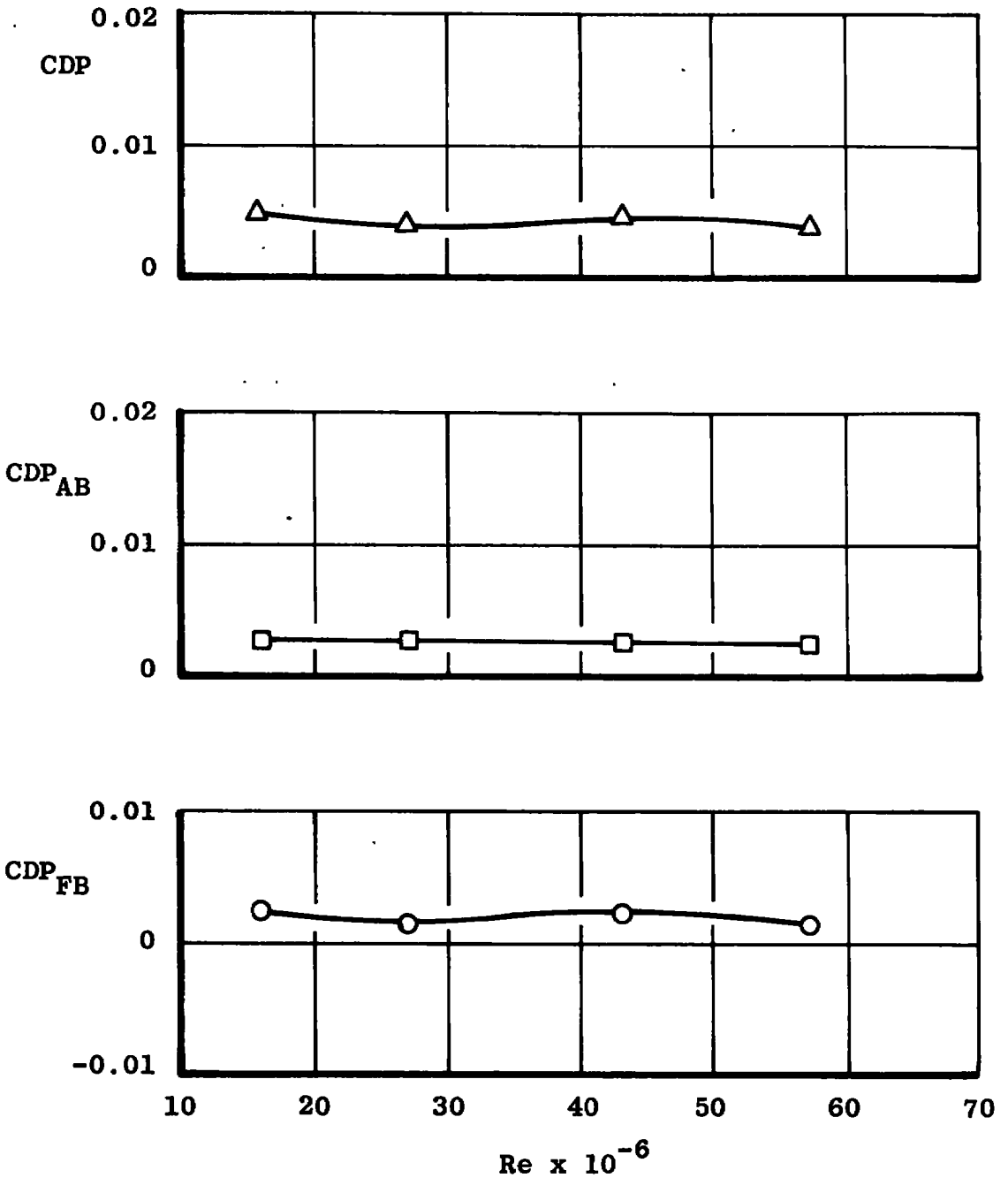


b. $M_\infty = 0.90$

Figure 27. Continued.

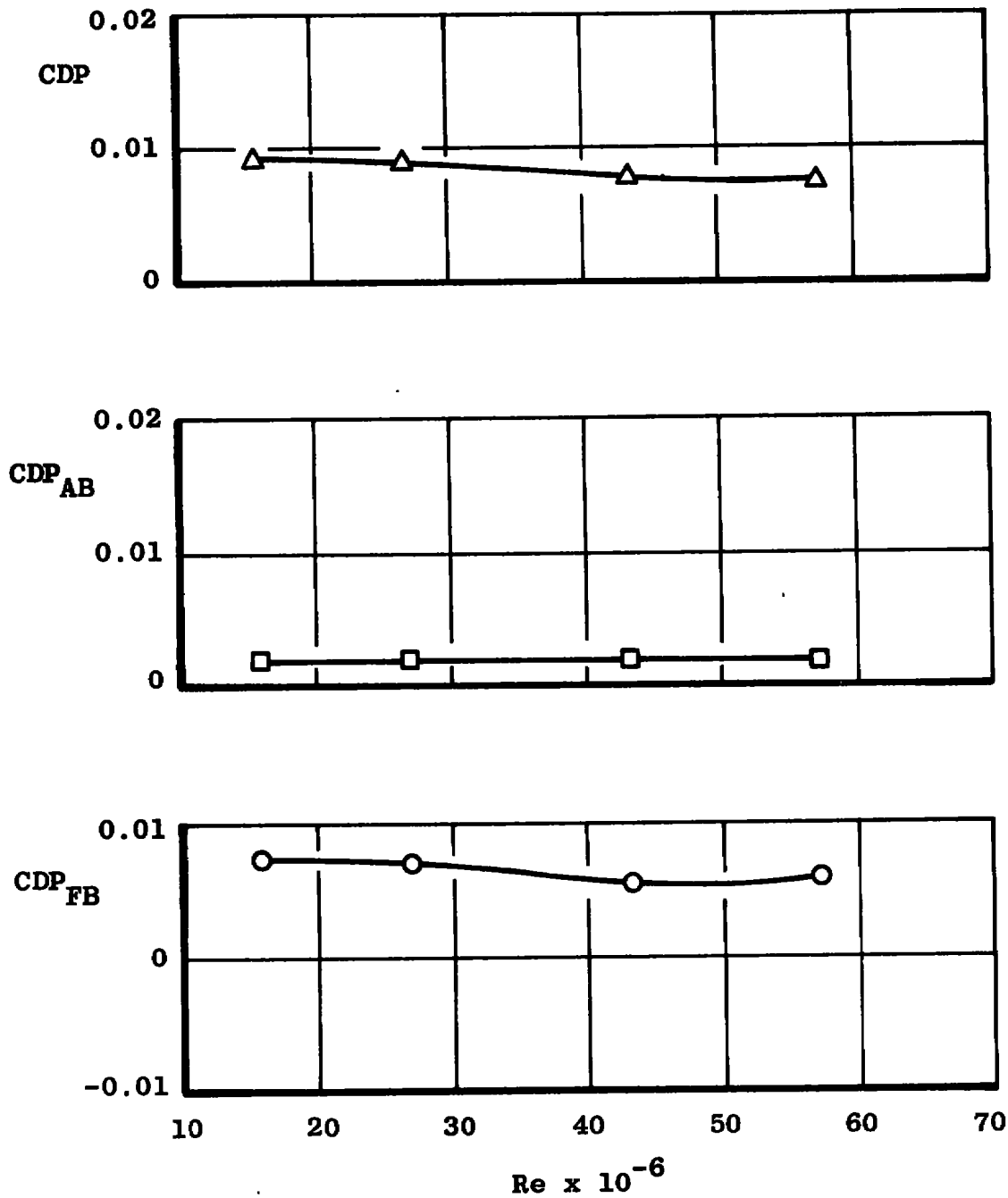


c. M_∞ = 1.20
Figure 27. Concluded.

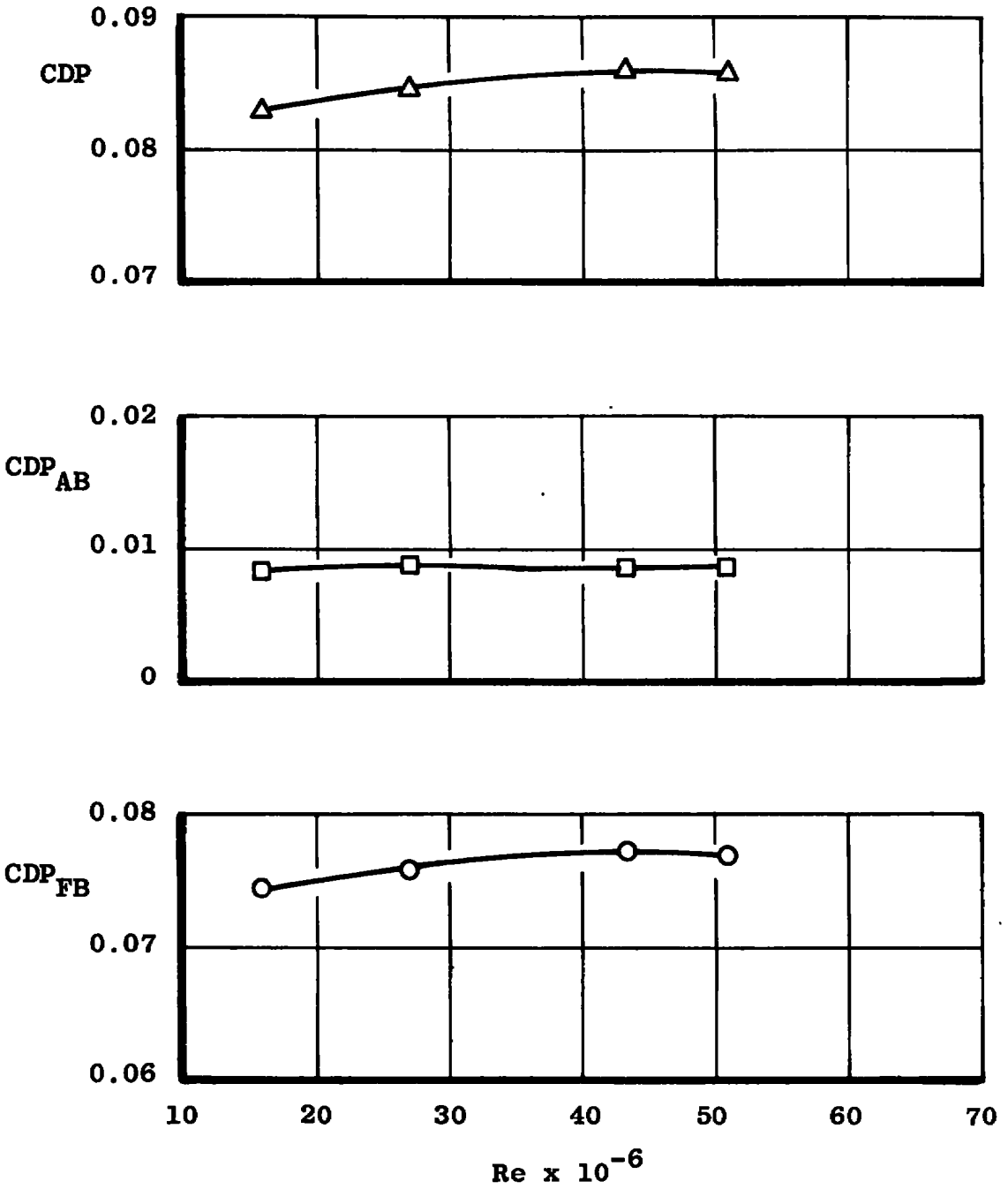


a. $M_\infty = 0.60$

Figure 28. Pressure drag coefficients versus Reynolds number for the cylindrical boattail configuration.



b. $M_\infty = 0.90$
Figure 28. Continued.



c. $M_\infty = 1.20$

Figure 28. Concluded.

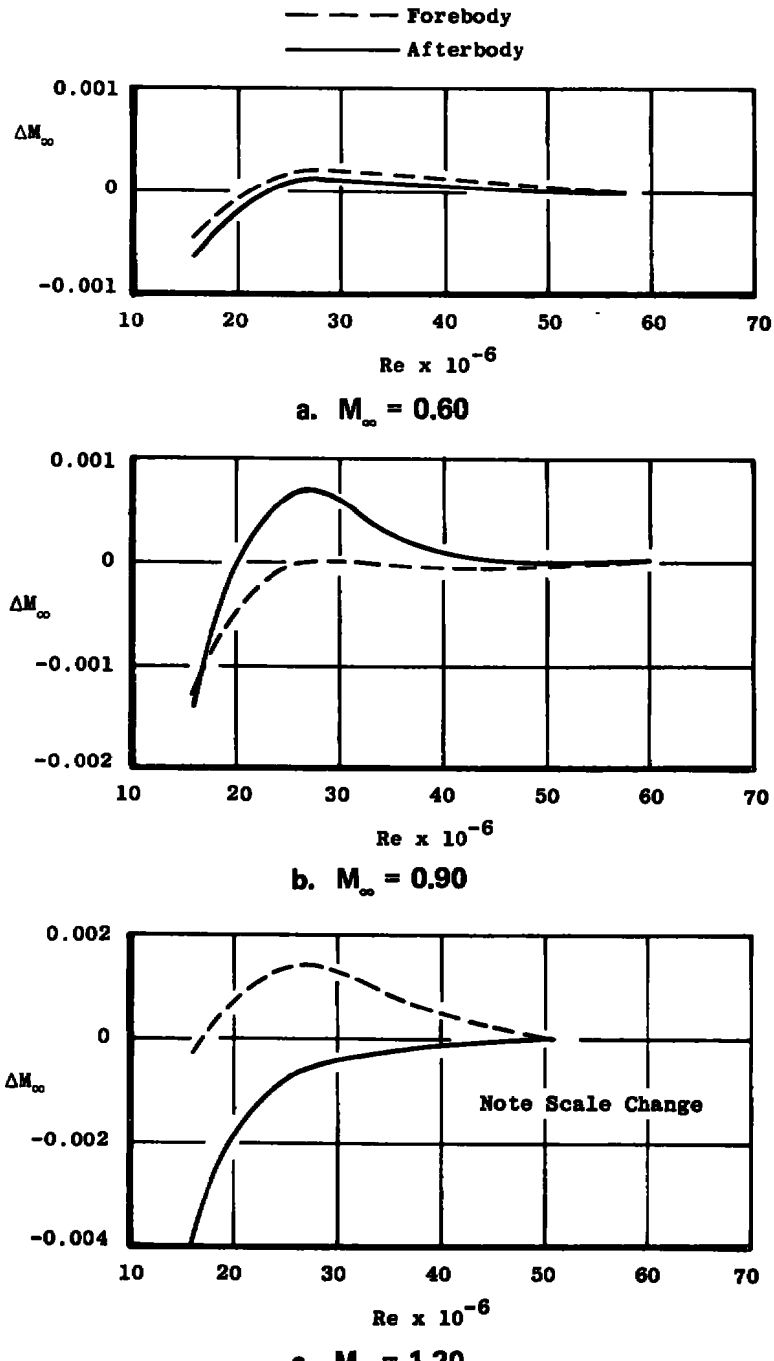
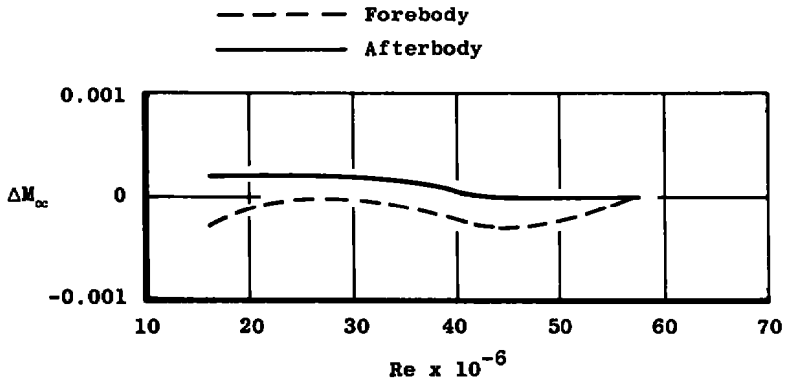
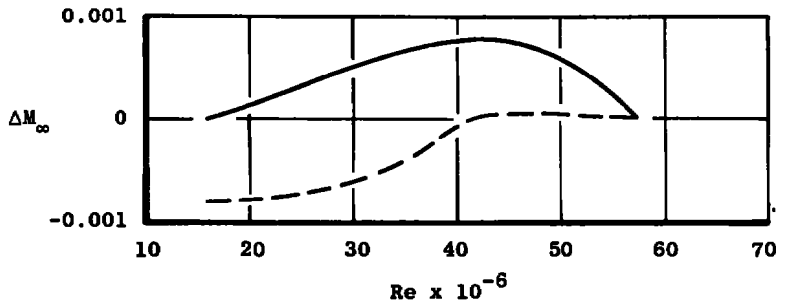


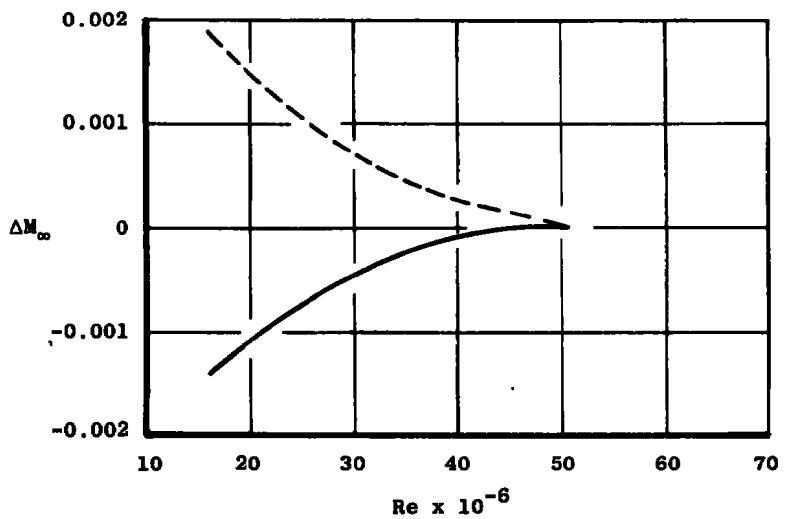
Figure 29. Free-stream Mach number deviation required for constant pressure drag equal to the drag at the maximum Reynolds number for the contoured boattail configuration.



a. $M_\infty = 0.60$

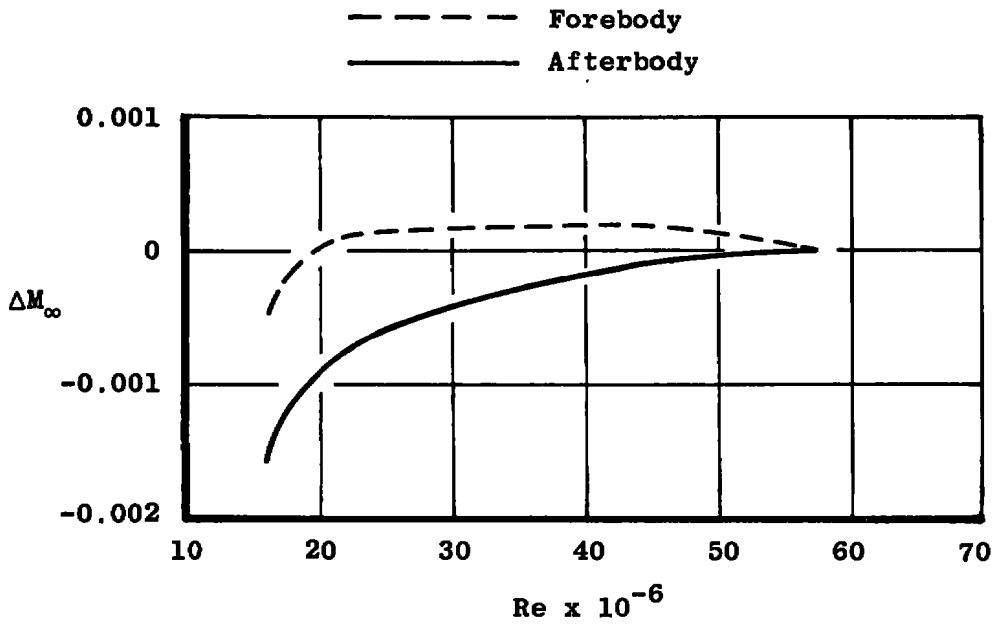


b. $M_\infty = 0.90$

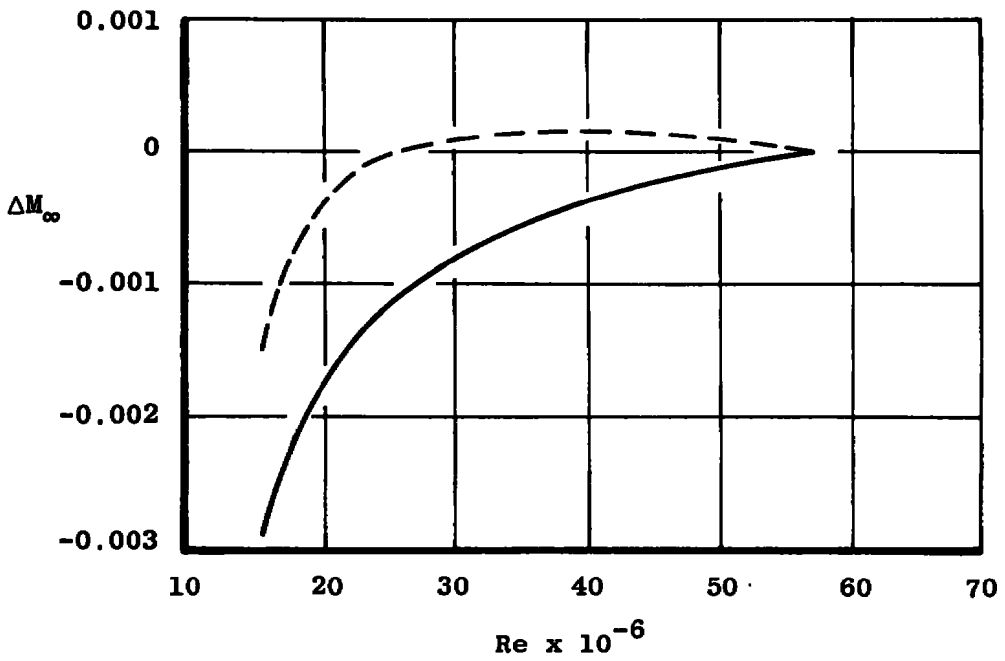


c. $M_\infty = 1.20$

Figure 30. Free-stream Mach number deviation required for constant pressure drag equal to the drag at the maximum Reynolds number for the cylindrical boattail configuration.

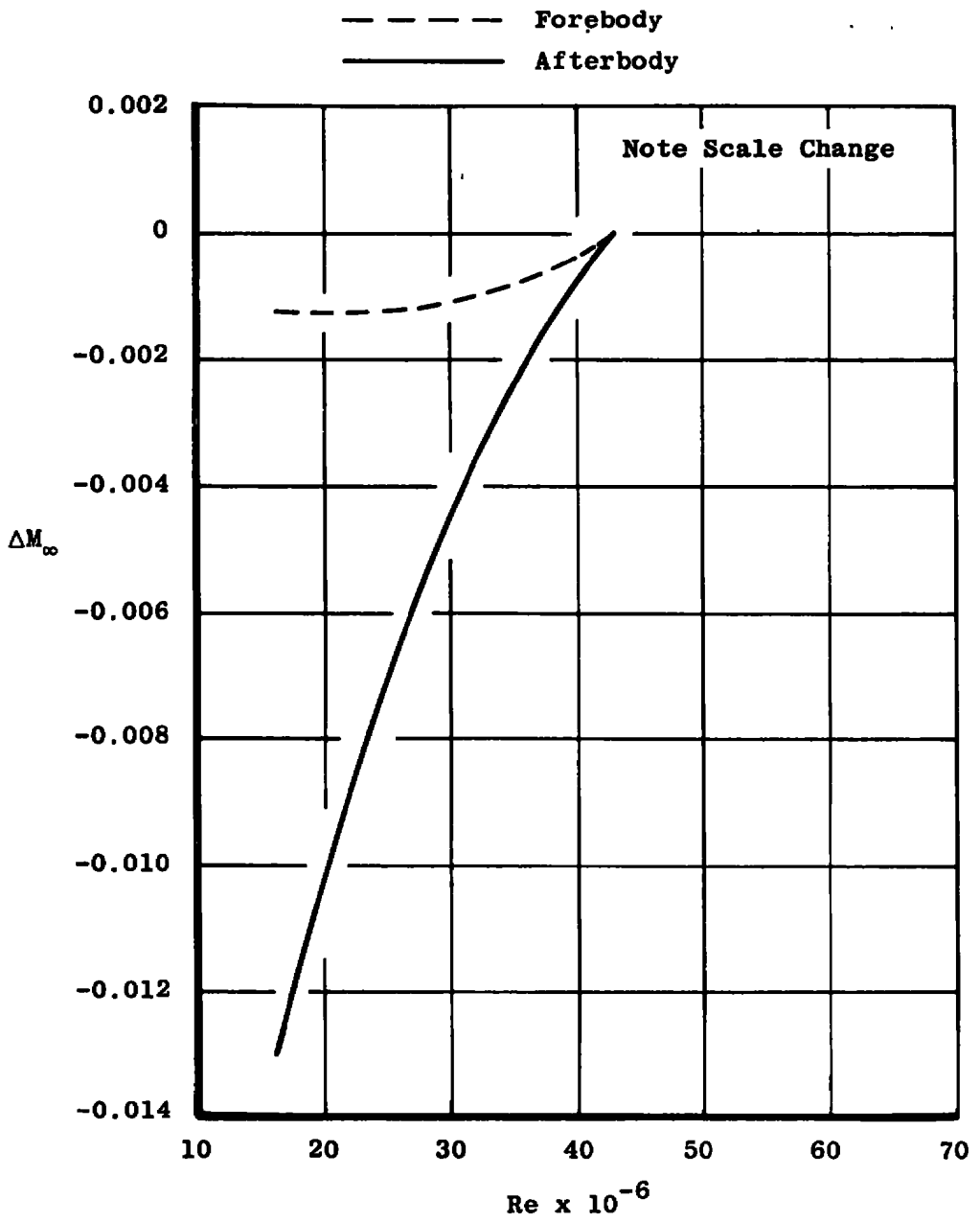


a. $M_\infty = 0.60$



b. $M_\infty = 0.90$

Figure 31. Free-stream Mach number deviation required for constant pressure drag equal to the drag at the maximum Reynolds number for the 15-deg boattail configuration.



c. $M_\infty = 1.20$

Figure 31. Concluded.

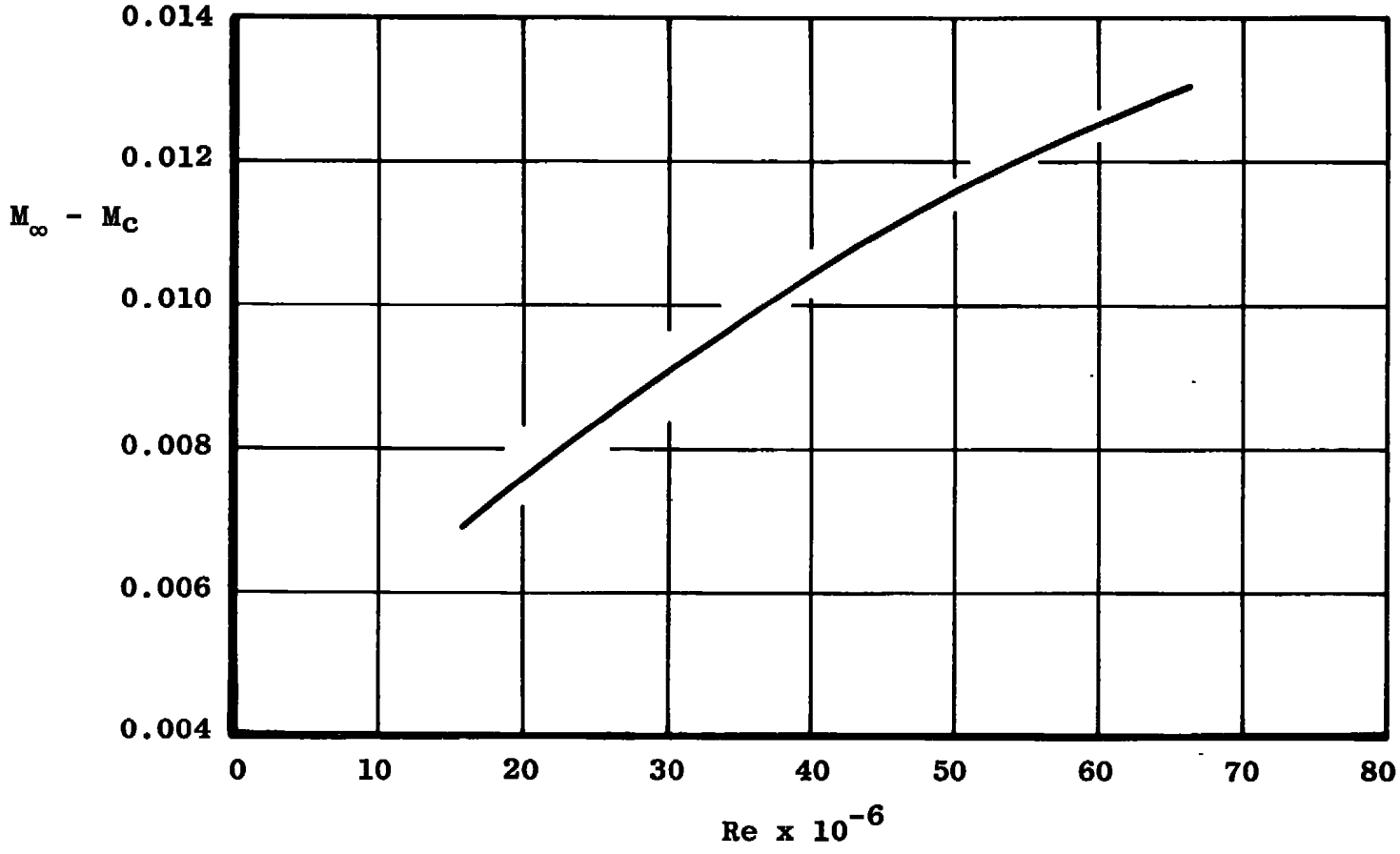


Figure 32. Tunnel calibration for test section with sting support.

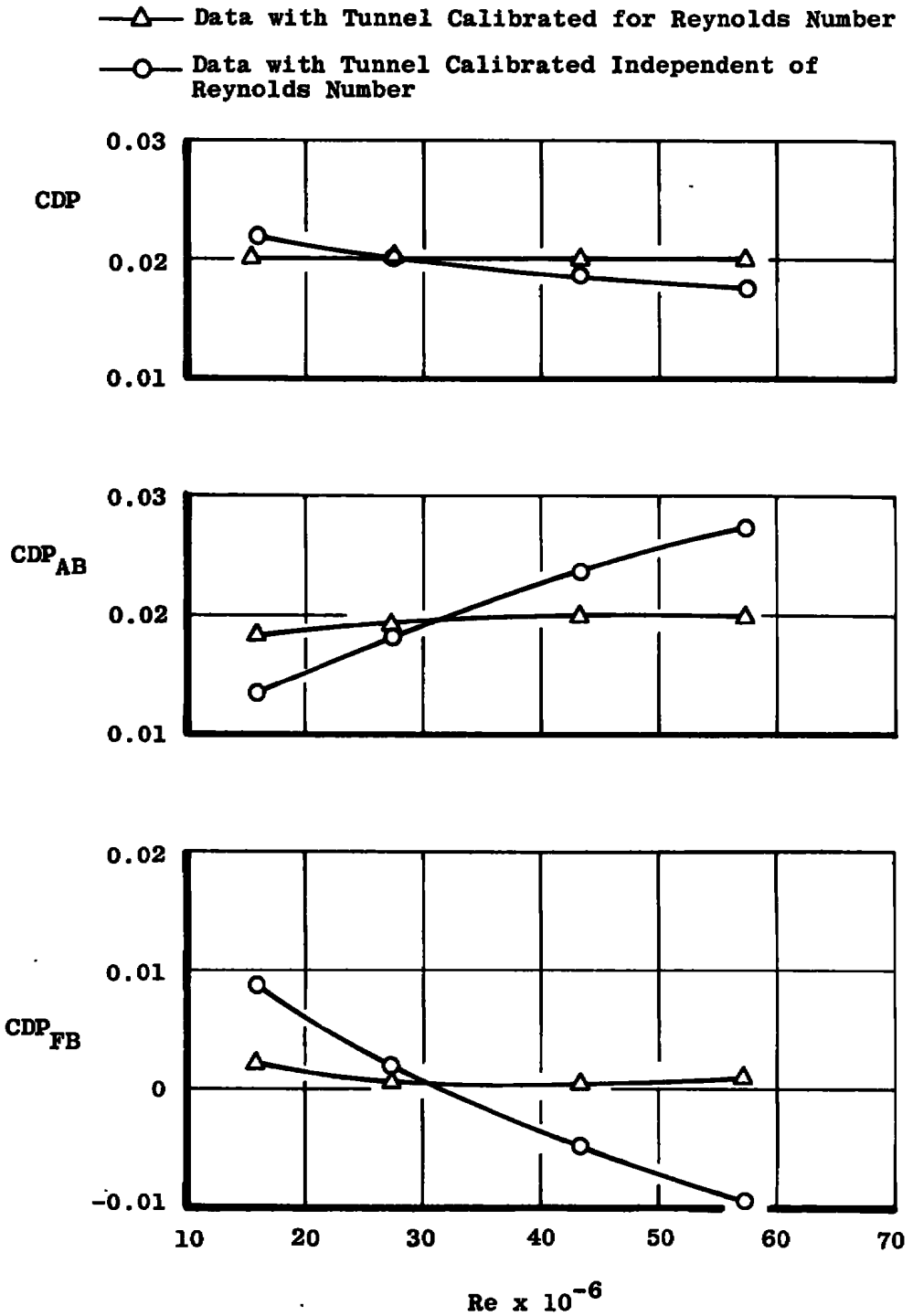
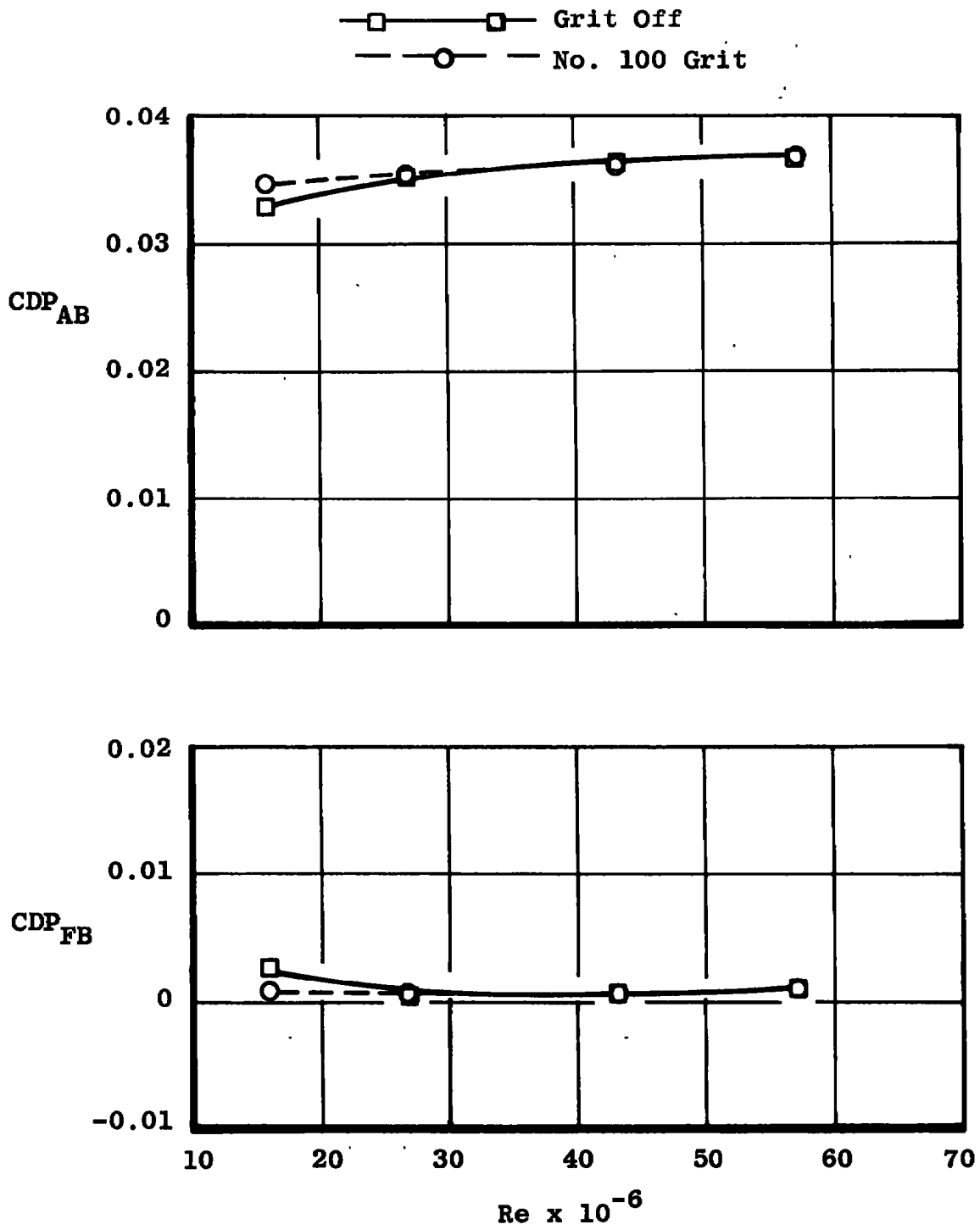
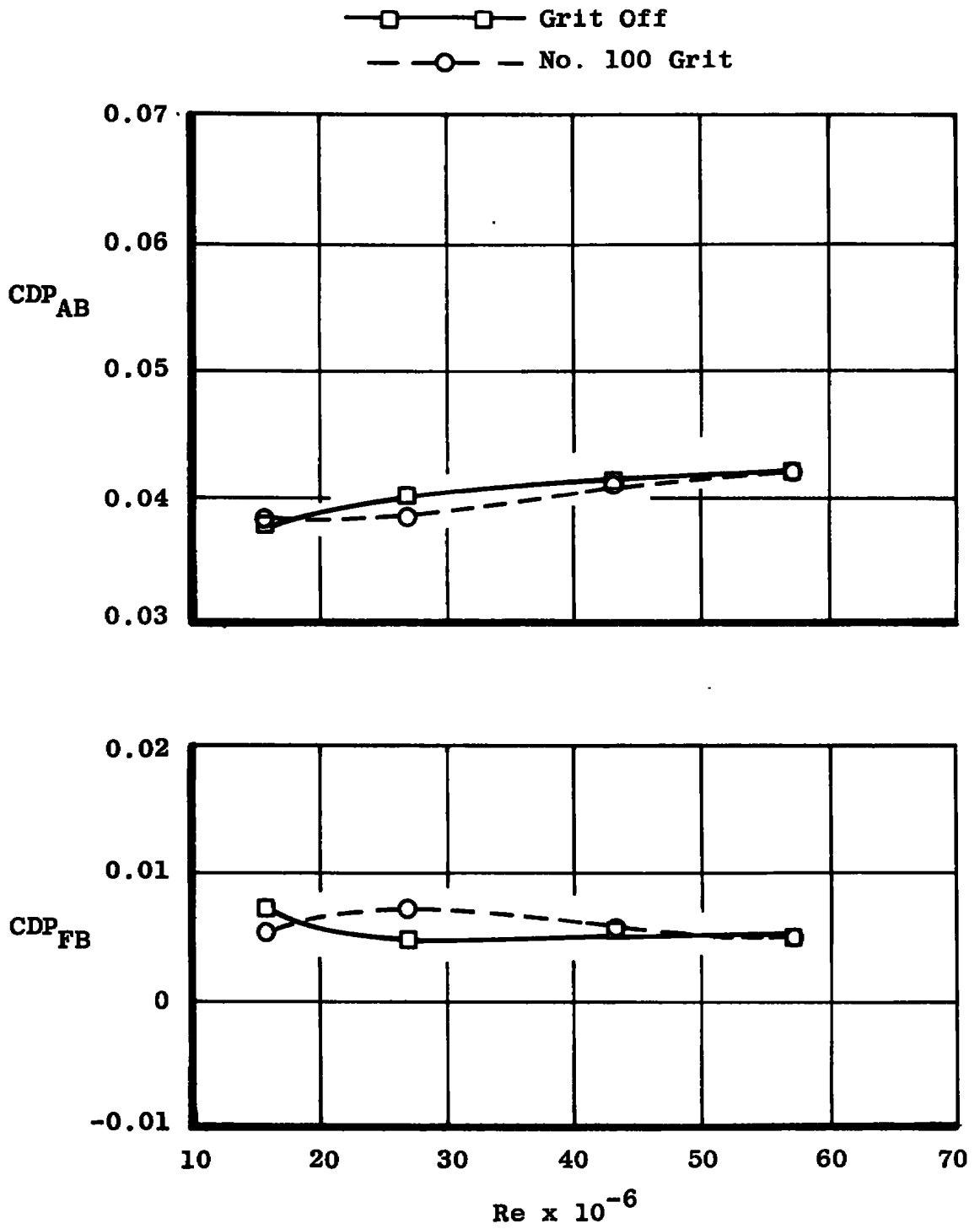


Figure 33. Comparison of pressure drag coefficients for contoured boattail configuration calculated with differing tunnel calibrations.



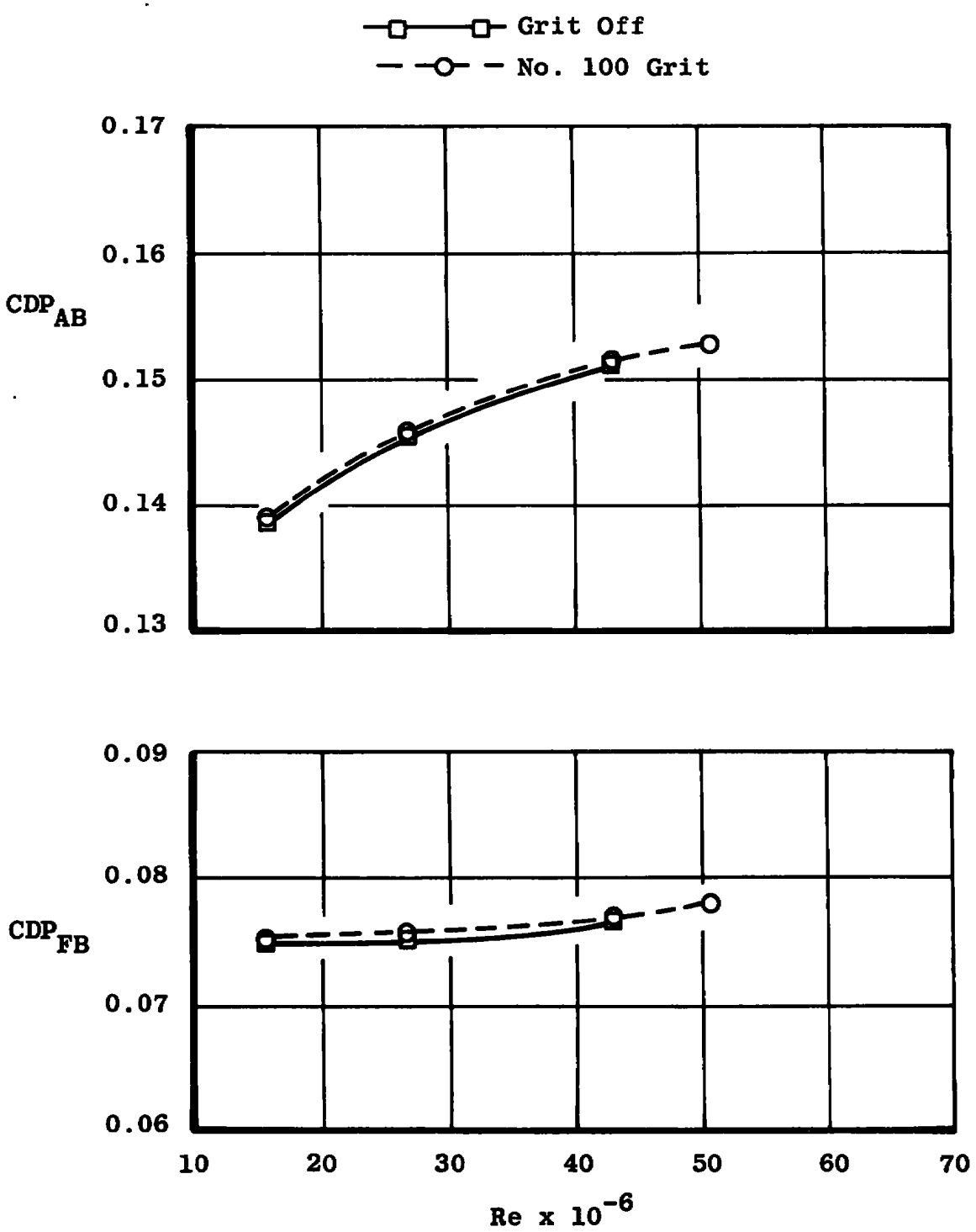
a. $M_\infty = 0.60$

Figure 34. Effect of grit on forebody and afterbody pressure drag coefficients for the 15-deg boattail configuration.



b. $M_\infty = 0.90$

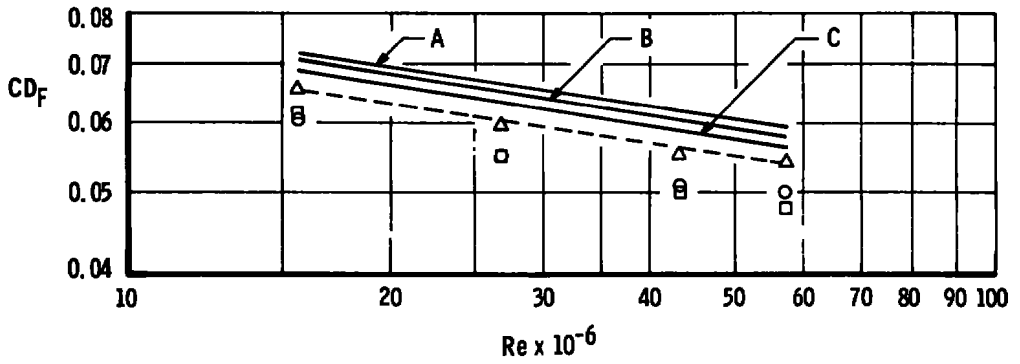
Figure 34. Continued.



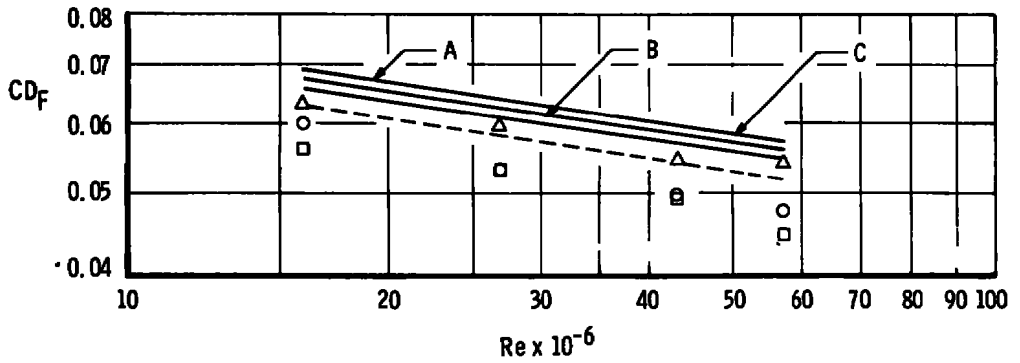
c. M_∞ = 1.20

Figure 34. Concluded.

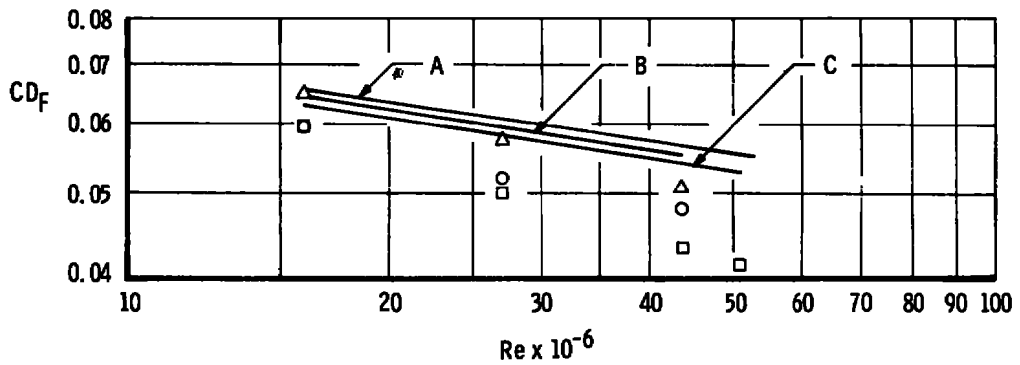
Frankl-Volshel	White, Ref. 6	CD_T - CDP	Config
A	Not Calculated	△	15-deg Boattail
B	---	○	Contoured Boattail
C	Not Calculated	□	Cylindrical Boattail



a. $M_\infty = 0.60$



b. $M_\infty = 0.90$



c. $M_\infty = 1.20$

Figure 35. Comparison of theoretical and experimental skin friction drag coefficients.

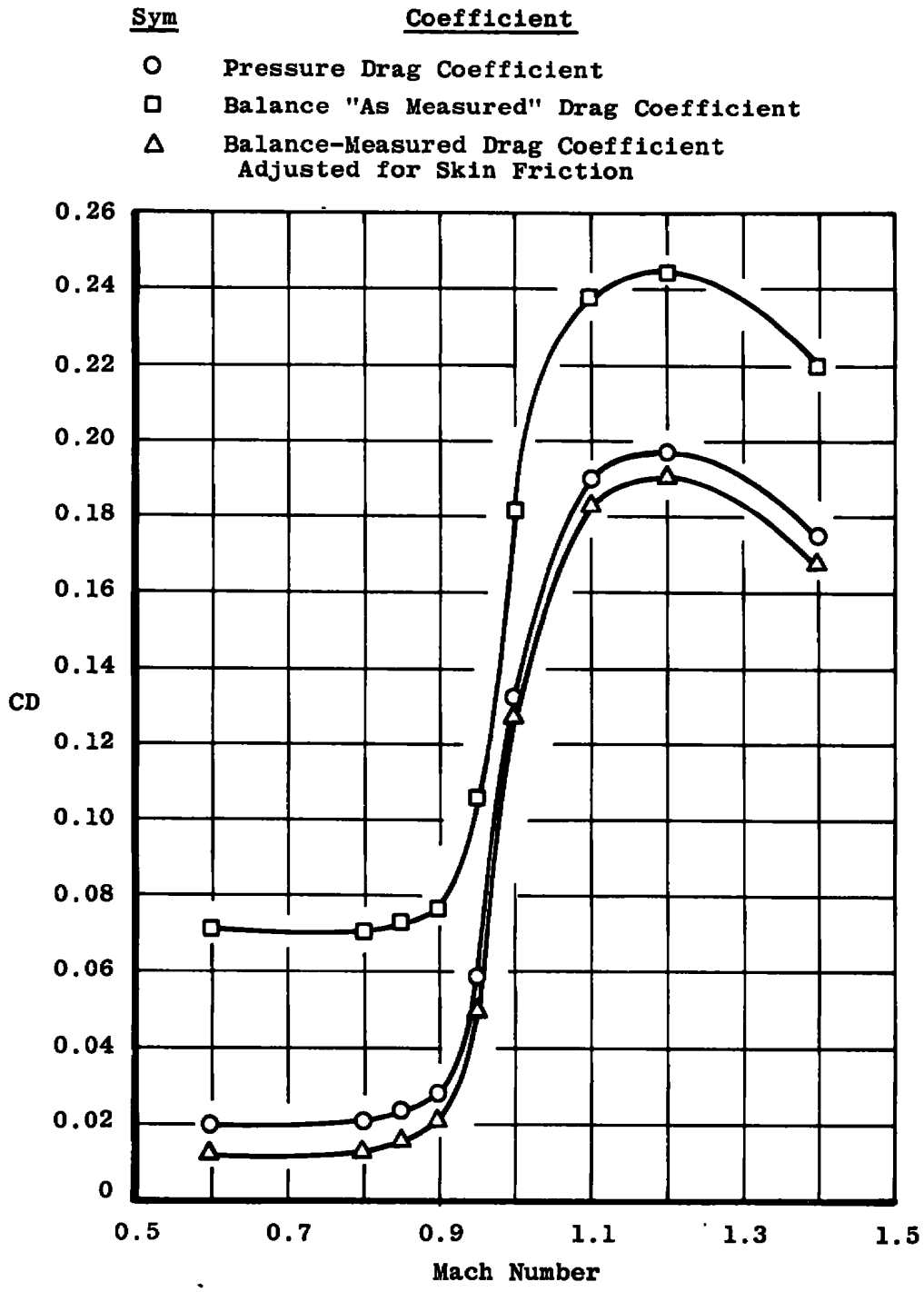


Figure 36. Balance-measured and pressure-integrated drag coefficients versus Mach number for the contoured boattail configuration, Re = 43 x 10^6.

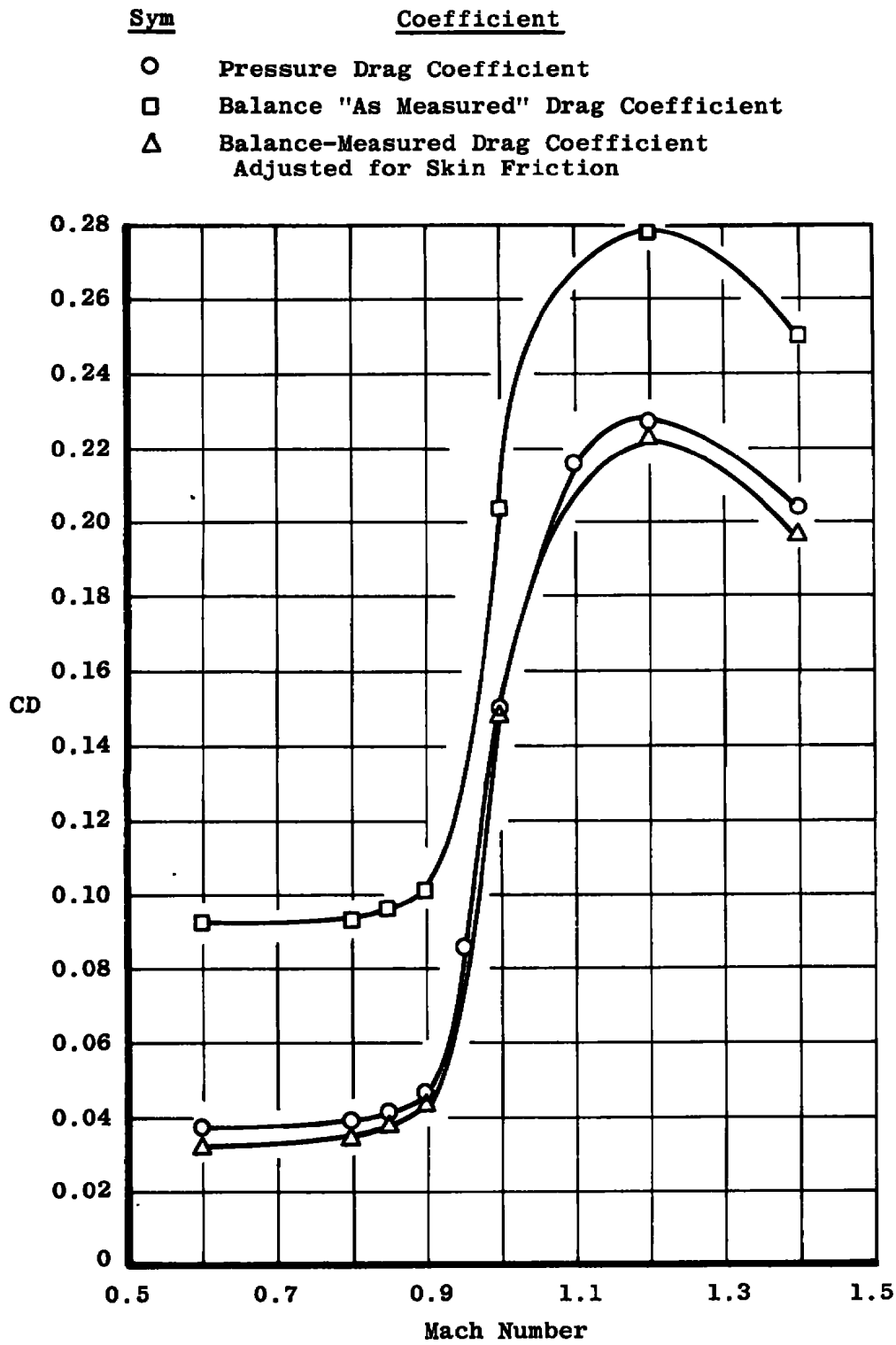
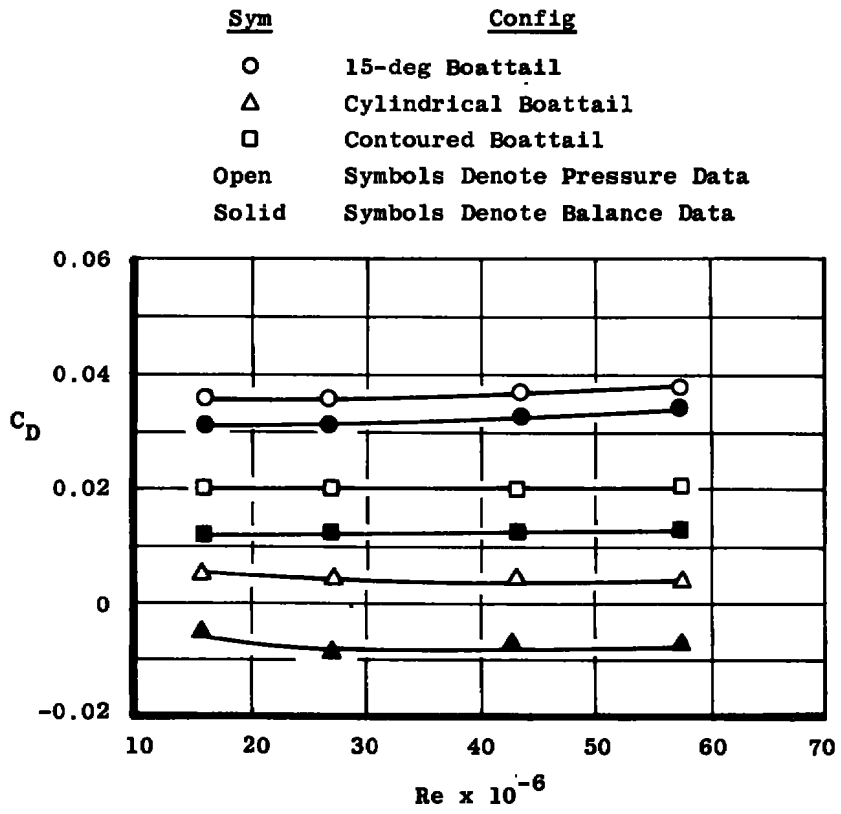
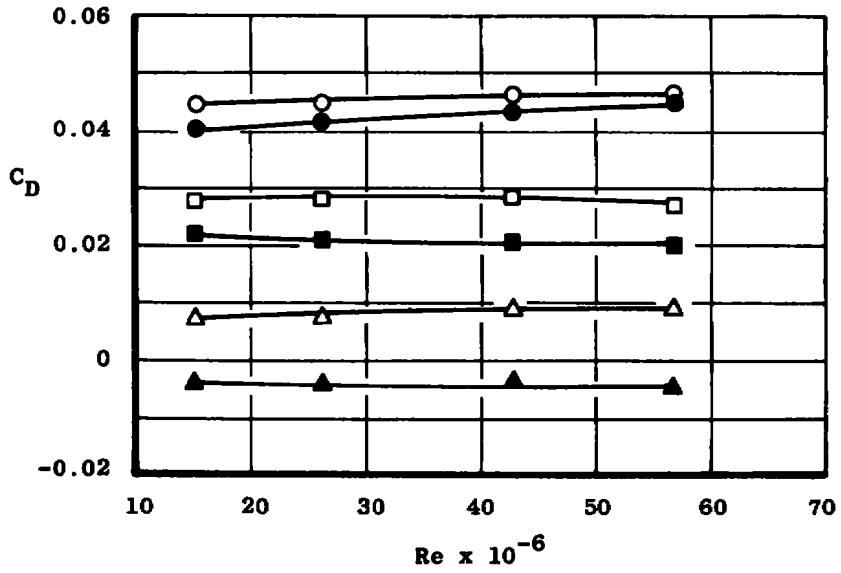


Figure 37. Balance-measured and pressure-integrated drag coefficients versus Mach number for the 15-deg boattail configuration, Re = 43 x 10^6.



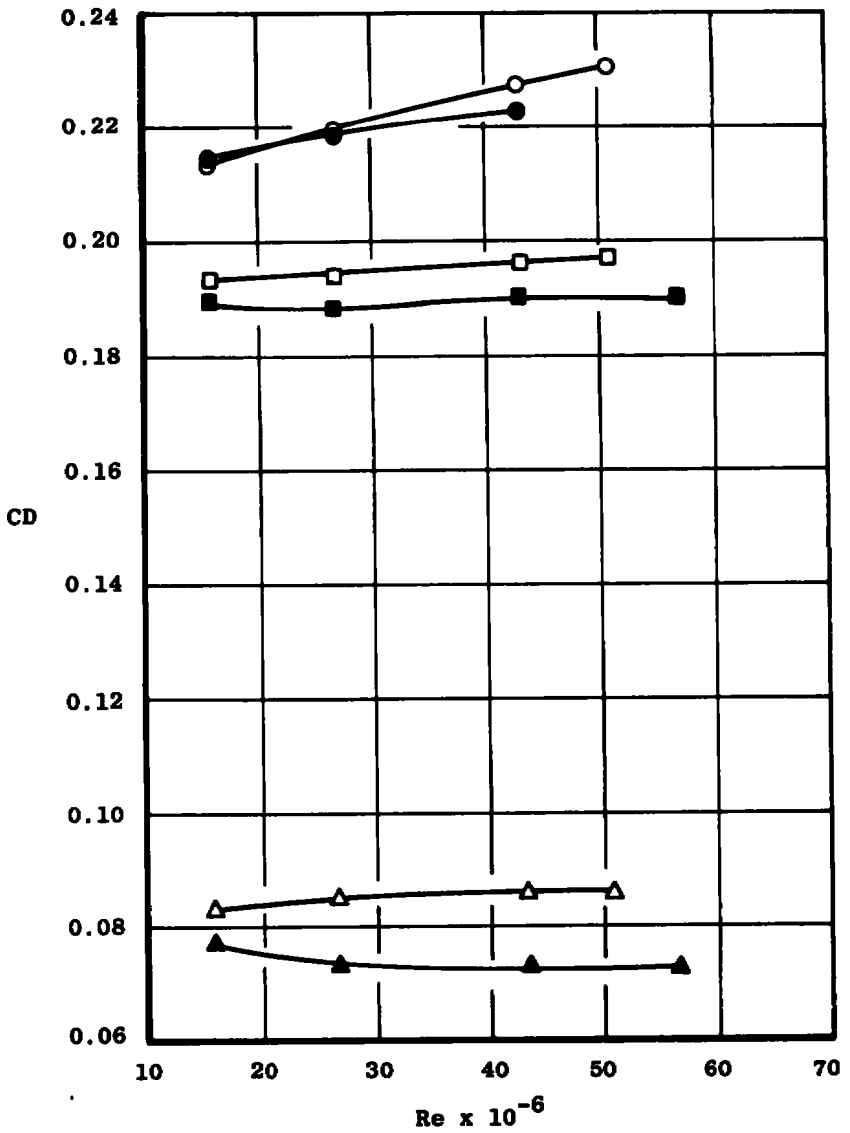
a. $M_\infty = 0.60$



b. $M_\infty = 0.90$

Figure 38. Effect of Reynolds number on model drag coefficient.

Sym	Config
○	15-deg Boattail
△	Cylindrical Boattail
□	Contoured Boattail
Open	Symbols Denote Pressure Data
Solid	Symbols Denote Balance Data



c. $M_\infty = 1.20$

Figure 38. Concluded.

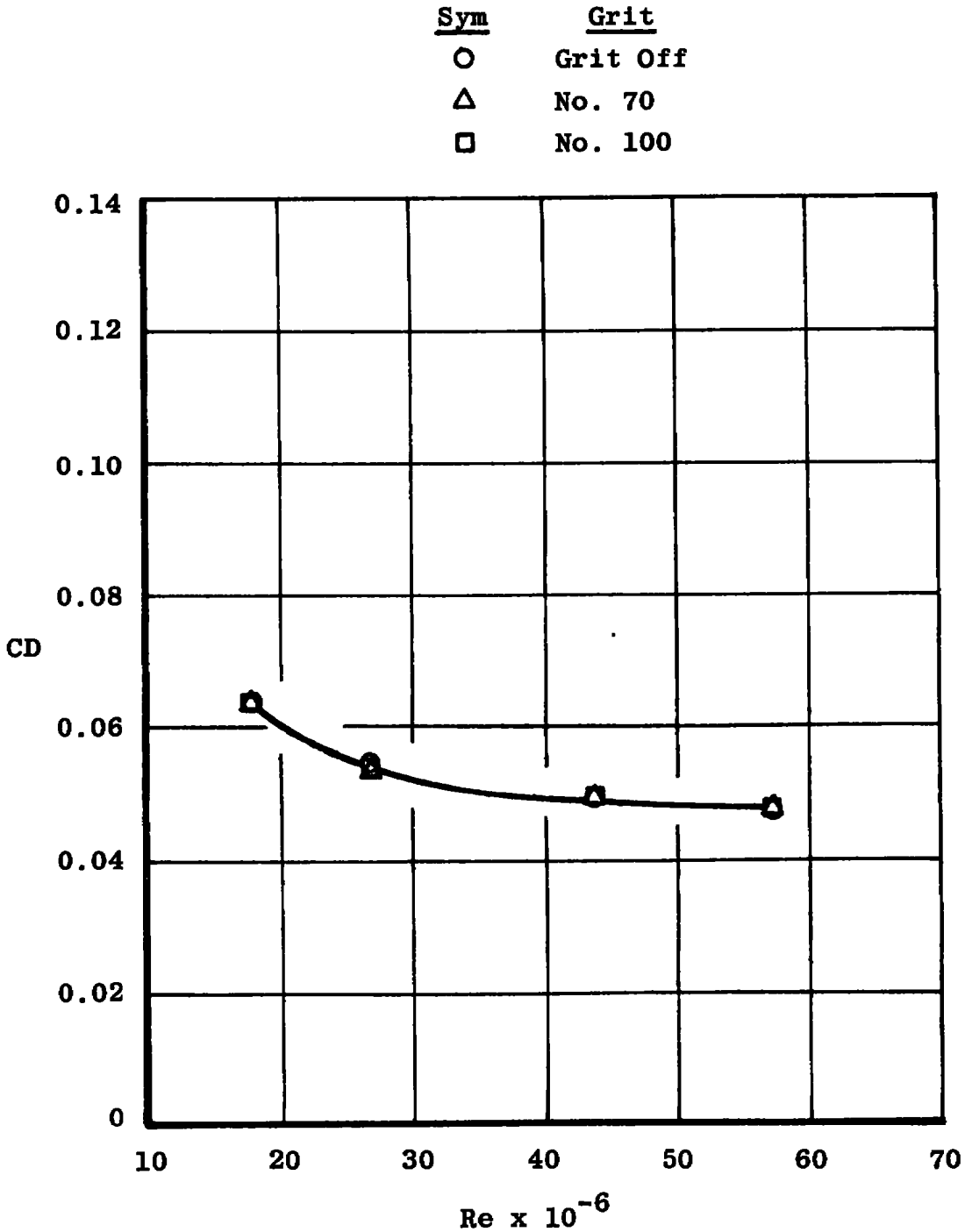


Figure 39. Effect of grit on total drag coefficient for the cylindrical boattail configuration, M_∞ = 0.60.

Table 1. Model Radius Distribution and Pressure Orifice Locations

Model Forward of Boattail						
Model Station	X/L	Model Radius, in.	Pressure Orifice No.			
			0	90 deg	180 deg	270 deg
0	0	0	---	---	---	---
1.231	0.0095	0.4837	---	38	---	111
2.340	0.0180	0.9033	75	---	1	---
3.380	0.0260	1.2775	---	39	---	---
4.222	0.0325	1.5646	76	---	2	---
4.972	0.0382	1.8067	---	---	---	112
5.673	0.0436	2.0199	77	---	3	---
6.348	0.0488	2.2127	---	40	---	---
7.013	0.0539	2.3900	78	---	4	---
7.677	0.0590	2.5551	---	---	---	113
8.349	0.0642	2.7101	79	---	5	---
9.036	0.0695	2.8567	---	41	---	114
9.741	0.0749	2.9961	80	---	6	---
10.469	0.0805	3.1294	---	42	---	115
11.222	0.0863	3.2571	81	---	7	---
12.000	0.0923	3.3801	---	43	---	---
12.801	0.0984	3.4987	82	---	8	---
13.624	0.1048	3.6134	---	---	---	116
14.468	0.1112	3.7246	83	---	9	---
15.327	0.1179	3.8326	---	44	---	117
16.199	0.1246	3.9377	84	---	10	---
17.082	0.1313	4.0399	---	45	---	118
17.963	0.1381	4.1397	85	---	11	---
18.777	0.1444	4.2372	---	46	---	---
19.528	0.1502	4.3324	---	---	12	---
20.227	0.1555	4.4255	---	---	---	119
20.885	0.1606	4.5168	86	---	---	---
21.508	0.1654	4.6063	---	47	---	---
22.102	0.1699	4.6940	---	---	13	---
22.671	0.1743	4.7801	---	---	---	120
23.218	0.1785	4.8648	87	---	---	---
23.747	0.1826	4.9479	---	48	---	---
24.258	0.1865	5.0297	---	---	14	---
24.755	0.1903	5.1102	---	---	---	121
25.239	0.1941	5.1894	88	---	---	---
25.712	0.1977	5.2675	---	49	---	---
26.049	0.2003	5.3235	---	---	15	---
26.627	0.2047	5.4202	---	---	---	122
26.946	0.2072	5.4739	89	---	---	---
27.507	0.2115	5.5687	---	50	---	---
27.938	0.2148	5.6415	---	---	16	---
28.371	0.2181	5.7134	---	---	---	123
28.810	0.2215	5.7844	90	---	---	---
29.257	0.2250	5.8545	---	51	---	---
29.713	0.2285	5.9237	---	---	17	---
30.177	0.2320	5.9922	---	---	---	124
30.650	0.2357	6.0599	91	---	---	---
31.133	0.2394	6.1270	---	52	---	---
31.625	0.2432	6.1932	---	---	18	---
32.130	0.2471	6.2587	---	---	---	125
32.646	0.2510	6.3235	92	---	---	---
33.175	0.2551	6.3877	---	53	---	---
33.717	0.2593	6.4513	---	---	19	---
34.273	0.2635	6.5142	---	---	---	126
34.844	0.2679	6.5766	93	---	---	---

Table 1. Continued

Model Forward of Boattail						
Model Station	X/L	Model Radius, in.	Pressure Orifice No.			
			0	90 deg	180 deg	270 deg
35.432	0.2724	6.6383	---	54	---	---
36.035	0.2771	6.6995	---	---	20	---
36.656	0.2819	6.7602	---	---	---	127
37.296	0.2868	6.8203	94	---	---	---
37.956	0.2919	6.8798	---	55	---	---
38.636	0.2971	6.9389	---	---	21	---
39.338	0.3025	6.9974	---	---	---	128
40.062	0.3080	7.0555	95	---	---	---
40.811	0.3138	7.1131	---	56	---	---
41.585	0.3198	7.1703	---	---	22	---
42.384	0.3259	7.2269	---	---	---	129
43.210	0.3322	7.2832	96	---	---	---
44.064	0.3388	7.3390	---	57	---	---
44.948	0.3456	7.3944	---	---	23	---
45.860	0.3526	7.4493	---	---	---	130
46.806	0.3599	7.5040	97	---	---	---
47.783	0.3674	7.5581	---	58	---	---
48.793	0.3752	7.6119	---	---	24	---
49.836	0.3832	7.6653	---	---	---	131
50.915	0.3915	7.7183	98	---	---	---
52.028	0.4001	7.7710	---	59	---	---
53.177	0.4089	7.8234	---	---	25	---
54.361	0.4180	7.8754	---	---	---	132
55.582	0.4274	7.9270	99	---	26	---
56.845	0.4371	7.9783	---	133	---	60
58.588	0.4505	8.0293	100	---	27	61
60.231	0.4631	8.0556	101	134	28	62
62.731	0.4823	8.0743	102	135	29	---
65.743	0.5055	8.0800	---	136	---	63
65.966	0.5072	8.0799	103	---	---	---
67.731	0.5208	8.0766	---	137	---	64
70.231	0.5400	8.0735	---	---	30	---
72.731	0.5592	8.0662	---	138	---	65
75.231	0.5785	8.0573	104	---	31	---
78.395	0.6028	8.0293	---	139	---	66
81.164	0.6241	7.9783	---	---	32	---
82.661	0.6356	7.9399	---	140	---	67
84.582	0.6504	7.8754	105	---	---	---
85.727	0.6592	7.8234	---	---	---	68
87.863	0.6756	7.7300	106	---	33	---
88.161	0.6779	7.7184	---	141	---	69
89.622	0.6891	7.6650	107	---	---	---
91.348	0.7024	7.6119	---	142	---	70
91.981	0.7073	7.5970	---	---	34	---
92.731	0.7130	7.5910	---	143	---	---
93.481	0.7188	7.5908	108	---	---	---
94.731	0.7284	7.5897	---	144	---	71
96.231	0.7399	7.5875	---	---	35	---
97.731	0.7515	7.5837	---	145	---	72
99.231	0.7630	7.5779	109	---	---	---
100.231	0.7707	7.5725	---	---	---	73
101.231	0.7784	7.5655	---	---	36	---
102.041	0.7846	7.5582	---	146	---	---
103.231	0.7938	7.5355	110	---	---	---
103.743	0.7977	7.5191	---	---	37	74

Table 1. Continued

Contoured Boattail						
Model Station	X/L	Model Radius, in.	Pressure Orifice No.			
			0	90 deg	180 deg	270 deg
105.954	0.8147	7.4526	174	---	147	---
107.472	0.8264	7.3944	---	161	---	187
108.642	0.8354	7.3390	175	---	---	---
109.613	0.8428	7.2832	---	162	---	---
110.436	0.8492	7.2269	---	---	148	---
111.139	0.8546	7.1703	---	---	---	188
111.750	0.8593	7.1131	176	---	---	---
112.289	0.8634	7.0555	---	163	---	---
112.776	0.8672	6.9974	---	---	149	---
113.216	0.8705	6.9389	---	---	---	189
113.619	0.8736	6.8798	177	---	---	---
113.994	0.8765	6.8203	---	164	---	---
114.346	0.8792	6.7602	---	---	150	---
114.678	0.8818	6.6995	---	---	---	190
114.992	0.8842	6.6384	178	---	---	---
115.294	0.8865	6.5766	---	165	---	---
115.584	0.8887	6.5143	---	---	151	---
115.864	0.8909	6.4513	---	---	---	191
116.134	0.8930	6.3877	179	---	---	---
116.399	0.8950	6.3235	---	166	---	---
116.659	0.8970	6.2587	---	---	152	---
116.915	0.8990	6.1932	---	---	---	192
117.164	0.9009	6.1269	180	---	---	---
117.418	0.9028	6.0599	---	167	---	---
117.675	0.9048	5.9923	---	---	153	---
117.936	0.9068	5.9237	---	---	---	193
118.235	0.9091	5.8545	181	---	---	---
118.532	0.9114	5.7844	---	168	---	---
118.828	0.9137	5.7134	---	---	154	---
119.130	0.9160	5.6415	---	---	---	194
119.446	0.9184	5.5687	182	---	---	---
119.780	0.9210	5.4949	---	169	---	---
120.134	0.9237	5.4202	---	---	155	---
120.509	0.9266	5.3444	---	---	---	195
120.907	0.9297	5.2675	183	---	---	---
121.330	0.9329	5.1894	---	170	---	---
121.783	0.9364	5.1102	---	---	156	---
122.266	0.9401	5.0297	---	---	---	196
122.784	0.9441	4.9479	184	---	157	---
123.343	0.9484	4.8648	---	171	---	---
123.951	0.9531	4.7801	---	---	158	---
124.617	0.9582	4.6940	---	---	---	197
125.669	0.9663	4.5719	185	---	159	---
126.199	0.9704	4.5168	---	172	---	198
127.192	0.9780	4.4255	---	---	160	---
128.469	0.9878	4.3324	---	173	---	199
129.631	0.9968	4.2750	186	---	---	---
130.053	1.0	4.2678	---	---	---	---

Table 1. Concluded

15-Deg Boattail						
Model Station	X/L	Model Radius, in.	Pressure Orifice No.			
			0	90 deg	180 deg	270 deg
106.048	0.8154	7.5031	174	---	---	---
107.432	0.8264	7.5031	---	160	---	---
108.731	0.8361	7.5031	---	---	147	---
109.613	0.8422	7.5031	---	---	---	187
110.322	0.8483	7.5031	---	161	---	---
110.436	0.8492	7.5031	175	---	---	---
111.623	0.8583	7.5028	---	---	148	---
113.828	0.8751	7.4478	---	---	---	188
114.780	0.8826	7.3934	176	---	---	---
115.524	0.8883	7.3382	---	162	---	---
116.146	0.8931	7.2833	---	---	149	---
116.704	0.8974	7.2272	---	---	---	189
117.207	0.9011	7.1713	177	---	---	---
117.673	0.9048	7.1147	---	163	---	---
118.114	0.9082	7.0570	---	---	150	---
118.616	0.9121	6.9871	---	---	---	190
118.915	0.9144	6.9419	178	---	---	---
119.292	0.9173	6.8831	---	164	---	---
119.641	0.9199	6.8259	---	---	151	---
119.979	0.9226	6.7683	---	---	---	191
120.319	0.9252	6.7077	179	---	---	---
120.662	0.9278	6.6441	---	165	---	---
120.981	0.9301	6.5826	---	---	152	---
121.290	0.9326	6.5211	---	---	---	192
121.597	0.9350	6.4580	180	---	---	---
121.890	0.9371	6.3957	---	166	---	---
122.181	0.9395	6.3322	---	---	153	---
122.469	0.9417	6.2675	---	---	---	193
122.748	0.9432	6.2031	181	---	---	---
123.022	0.9459	6.1380	---	167	---	---
123.295	0.9480	6.0716	---	---	154	---
123.656	0.9508	5.9806	---	---	---	194
123.831	0.9522	5.9364	182	---	---	---
124.094	0.9542	5.8678	---	168	---	---
124.212	0.9551	5.8365	---	---	155	---
124.403	0.9566	5.7817	---	---	---	195
124.676	0.9587	5.7086	183	---	---	---
125.209	0.9628	5.5657	---	169	---	---
125.482	0.9649	5.4926	---	---	---	196
125.529	0.9652	5.4800	---	---	156	---
125.760	0.9670	5.4181	184	---	---	---
126.043	0.9692	5.3422	---	170	---	---
126.329	0.9714	5.2656	---	---	157	---
126.621	0.9736	5.1875	---	---	---	197
126.917	0.9759	5.1081	185	---	---	---
127.217	0.9782	5.0277	---	171	---	---
127.523	0.9805	4.9457	---	---	158	---
127.834	0.9829	4.8623	---	---	---	198
128.472	0.9878	4.6914	---	172	---	---
128.800	0.9904	4.6035	---	---	159	---
129.134	0.9929	4.5140	---	---	---	199
129.476	0.9956	4.4224	186	---	---	---
129.825	0.9982	4.3288	---	173	---	---
130.053	1.0	4.2678	---	---	---	---

Table 2. Summary of Test Matrix

Phase	Configuration	Grit Size	Roll Angle, deg	Pitch Angle, deg	Characteristic Reynolds Number	Mach Number								
						0.60	0.30	0.85	0.90	0.95	1.00	1.10	1.20	1.40
Pressure	15-deg Boattail, High Pressure Air	Off	0	0	43×10^6	x								
	15-deg Boattail	100	0	0	43×10^6		x	x		x	x	x		*
					16×10^6 to 58×10^6	x			x				x	
	15-deg Boattail	Off	0	0	43×10^6		x	x		x	x	x		*
					16×10^6 to 58×10^6	x			x				x	
	Cylindrical Boattail	Off	0	0	43×10^6		x	x		x	x	x		*
					16×10^6 to 58×10^6	x			x				x	
	Contoured Boattail	Off	0	0	43×10^6		x	x		x	x	x		*
			Var	Var	16×10^6 to 58×10^6	x			x				x	
Force	Cylindrical Boattail	Off	0	0	16×10^6 to 58×10^6	x			x				x	
	Cylindrical Boattail	Var (70;100)	0	0	43×10^6		x	x		x	x	x		*
					16×10^6 to 58×10^6	x			x				x	
	Contoured Boattail	70	0	0	43×10^6		x	x		x	x	x		*
					16×10^6 to 58×10^6	x			x				x	
	15-deg Boattail	70	0	0	43×10^6		x	x			x			*
					16×10^6 to 58×10^6	x			x				x	

*Data Obtained at Characteristic Reynolds Number of 41×10^6

Var = Varied

Table 3. Uncertainty of Measurements

Component	Re = 15.93 x 10^6						Re = 43.35 x 10^6					
	M_∞ = 0.60		M_∞ = 0.90		M_∞ = 1.20		M_∞ = 0.60		M_∞ = 0.90		M_∞ = 1.20	
	δ	U	δ	U	δ	U	δ	U	δ	U	δ	U
M_∞	±0.0015	±0.0045	±0.0017	±0.0035	±0.002	±0.0039	±0.0005	±0.0026	±0.0006	±0.0022	±0.0006	±0.0023
P_T, psf	±0.630	±2.10	±0.620	±1.90	±0.615	±1.85	±0.684	±3.35	±0.663	±2.90	±0.658	±2.80
P_∞, psf	±0.620	±1.90	±0.625	±1.65	±0.625	±1.55	±0.662	±2.90	±0.630	±2.40	±0.630	±2.10
q_∞, psf	±0.700	±2.40	±0.550	±1.40	±0.360	±1.00	±0.860	±3.70	±0590	±2.60	±0.390	±1.50
C_p	±0.005	±0.013	±0.003	±0.009	±0.002	±0.007	±0.0019	±0.0082	±0.0013	±0.0049	±0.0011	±0.0037

Table 4. Data Repeatability

Component	M = 0.60			M = 0.90			M = 1.20		
	15-deg	Contoured	Cylindrical	15-deg	Contoured	Cylindrical	15-deg	Contoured	Cylindrical
CDP_{FB}	±0.0007	±0.0006	±0.0005	±0.0008	±0.0001	±0.0007	±0.0005	±0.0004	±0.0005
CDP_{AB}	±0.0002	±0.0003	±0.0001	±0.0006	±0.0001	±0.0002	±0.0004	±0.0005	±0.0004
CDP	±0.0001	±0.0003	±0.0004	±0.0002	±0.0001	±0.0010	±0.0009	±0.0008	±0.0003
CD	±0.0003	±0.0003	±0.0007	±0.0004	±0.0008	±0.0009	±0.0004	±0.0003	±0.0003

APPENDIX A
TABULATED DATA

Table A-1. Summary of Tabulated Data

Configuration	Grit	Characteristic Reynolds Number x 10^6	Mach Number		
			0.60	0.90	1.20
15-deg Boattail	Off	15.93	x	x	x
		27.10	x	x	x
		43.35	x	x	x
		50.93			
		57.44	x	x	
Cylindrical Boattail	Off	15.93	x	x	x
		27.10	x	x	x
		43.35	x	x	x
		50.93			x
		57.44	x	x	
Contoured Boattail	Off	15.93	x	x	x
		27.10	x	x	x
		43.35	x	x	x
		50.93			x
		57.44	x	x	

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.596 PT= 928.555PSF P1= 730.449PSF Q= 181.436PSF RE= 1.448X 10**-6/FT

CP(75)= 0.3043	CP(38)= 0.4056	CP(1)= 0.2952	CP(111)= 0.3867
CP(76)= 0.1654	CP(39)= 0.2440	CP(2)= 0.1918	CP(112)= 0.1334
CP(77)= 0.0738	CP(40)= 0.0814	CP(3)= 0.1193	CP(113)= 0.0334
CP(78)= 0.0211	CP(41)= 0.0077	CP(4)= 0.0469	CP(114)= 0.0136
CP(79)= 0.0180	CP(42)= 0.0033	CP(5)= 0.0188	CP(115)=-0.0062
CP(80)= 0.0033	CP(43)=-0.0010	CP(6)= 0.0077	CP(116)= 0.0110
CP(81)= 0.0085	CP(44)= 0.0033	CP(7)= 0.0073	CP(117)= 0.0283
CP(82)= 0.0092	CP(45)= 0.0513	CP(8)= 0.0144	CP(118)= 0.0525
CP(83)= 0.0245	CP(46)= 0.0805	CP(9)= 0.0247	CP(119)= 0.0850
CP(84)= 0.0398	CP(47)= 0.0846	CP(10)= 0.0374	CP(120)= 0.0775
CP(85)= 0.0680	CP(48)= 0.0687	CP(11)= 0.0687	CP(121)= 0.0565
CP(86)= 0.0699	CP(49)= 0.0414	CP(12)= 0.0835	CP(122)= 0.0259
CP(87)= 0.0719	CP(50)= 0.0069	CP(13)= 0.0793	CP(123)=-0.0102
CP(88)= 0.0430	CP(51)=-0.0430	CP(14)= 0.0556	CP(124)=-0.0463
CP(89)= 0.0176	CP(52)=-0.0577	CP(15)= 0.0318	CP(125)=-0.0613
CP(90)=-0.0318	CP(53)=-0.0645	CP(16)=-0.0052	CP(126)=-0.0652
CP(91)=-0.0462	CP(54)=-0.0724	CP(17)=-0.0423	CP(127)=-0.0745
CP(92)=-0.0605	CP(55)=-0.0733	CP(18)=-0.0606	CP(128)=-0.0689
CP(93)=-0.0678	CP(56)=-0.0787	CP(19)=-0.0641	CP(129)=-0.0721
CP(94)=-0.0688	CP(57)=-0.0661	CP(20)=-0.0753	CP(130)=-0.0657
CP(95)=-0.0686	CP(58)=-0.0633	CP(21)=-0.0697	CP(131)=-0.0646
CP(96)=-0.0685	CP(59)=-0.0633	CP(22)=-0.0688	CP(132)=-0.0741
CP(97)=-0.0622	CP(133)=-0.0903	CP(23)=-0.0636	CP(60)=-0.0906
CP(98)=-0.0670	CP(134)=-0.0848	CP(24)=-0.0657	CP(61)=-0.0962
CP(99)=-0.0765	CP(135)=-0.0705	CP(25)=-0.0657	CP(62)=-0.0835
CP(100)=-0.0947	CP(136)=-0.0554	CP(26)=-0.0715	CP(63)=-0.0517
CP(101)=-0.0798	CP(137)=-0.0528	CP(27)=-0.0907	CP(64)=-0.0506
CP(102)=-0.0708	CP(138)=-0.0506	CP(28)=-0.0851	CP(65)=-0.0470
CP(103)=-0.0567	CP(139)=-0.0614	CP(29)=-0.0755	CP(66)=-0.0589
CP(104)=-0.0582	CP(140)=-0.0538	CP(30)=-0.0462	CP(67)=-0.0549
CP(105)=-0.0470	CP(141)=-0.0026	CP(31)=-0.0518	CP(68)=-0.0344
CP(106)=-0.0193	CP(142)= 0.0235	CP(32)=-0.0565	CP(69)=-0.0026
CP(107)= 0.0085	CP(143)= 0.0073	CP(33)=-0.0010	CP(70)= 0.0235
CP(108)= 0.0069	CP(144)=-0.0090	CP(34)= 0.0259	CP(71)=-0.0058
CP(109)=-0.0400	CP(145)=-0.0265	CP(35)=-0.0201	CP(72)=-0.0284
CP(110)=-0.0531	CP(146)=-0.0484	CP(36)=-0.0402	CP(73)=-0.0395
CP(174)=-0.0459	CP(161)=-0.1281	CP(37)=-0.0299	CP(74)=-0.0406
CP(175)=-0.1054	CP(162)=-0.2108	CP(147)=-0.0774	CP(187)=-0.0876
CP(176)=-0.2107	CP(163)=-0.2025	CP(148)=-0.1546	CP(188)=-0.2049
CP(177)=-0.2005	CP(164)=-0.1684	CP(149)=-0.2112	CP(189)=-0.2059
CP(178)=-0.1752	CP(165)=-0.1383	CP(150)=-0.1870	CP(190)=-0.1882
CP(179)=-0.1461	CP(166)=-0.1034	CP(151)=-0.1602	CP(191)=-0.1597
CP(180)=-0.1133	CP(167)=-0.0652	CP(152)=-0.1300	CP(192)=-0.1275
CP(181)=-0.0736	CP(168)=-0.0209	CP(153)=-0.0961	CP(193)=-0.0887
CP(182)=-0.0342	CP(169)= 0.0168	CP(154)=-0.0518	CP(194)=-0.0455
CP(183)= 0.0053	CP(170)= 0.0544	CP(155)=-0.0110	CP(195)=-0.0102
CP(184)= 0.0422	CP(171)= 0.0842	CP(156)= 0.0253	CP(196)= 0.0354
CP(185)= 0.0756	CP(172)= 0.1139	CP(157)= 0.0616	CP(197)= 0.0660
CP(186)= 0.1156	CP(173)= 0.1356	CP(158)= 0.0917	CP(198)= 0.0966
		CP(159)= 0.1223	CP(199)= 0.1285
		CP(160)=-0.0533	

CPB1= 0.1564 CPB2= 0.1544 CPB3= 0.1554 CPB4= 0.1546

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.598 PT=1598.850PSF P1=1255.397PSF Q= 314.331PSF RE= 2.495X 10**-6/FT

CP(75)= 0.2921	CP(38)= 0.4035	CP(1)= 0.2856	CP(111)= 0.3762
CP(76)= 0.1337	CP(39)= 0.2389	CP(2)= 0.1971	CP(112)= 0.1242
CP(77)= 0.0644	CP(40)= 0.0788	CP(3)= 0.1201	CP(113)= 0.0301
CP(78)= 0.0102	CP(41)= 0.0052	CP(4)= 0.0431	CP(114)= 0.0097
CP(79)= 0.0164	CP(42)= 0.0043	CP(5)= 0.0180	CP(115)=-0.0106
CP(80)=-0.0005	CP(43)= 0.0034	CP(6)= 0.0054	CP(116)= 0.0086
CP(81)= 0.0029	CP(44)= 0.0084	CP(7)= 0.0045	CP(117)= 0.0278
CP(82)= 0.0017	CP(45)= 0.0512	CP(8)= 0.0084	CP(118)= 0.0519
CP(83)= 0.0169	CP(46)= 0.0790	CP(9)= 0.0166	CP(119)= 0.0860
CP(84)= 0.0322	CP(47)= 0.0836	CP(10)= 0.0301	CP(120)= 0.0775
CP(85)= 0.0645	CP(48)= 0.0681	CP(11)= 0.0642	CP(121)= 0.0565
CP(86)= 0.0681	CP(49)= 0.0411	CP(12)= 0.0826	CP(122)= 0.0271
CP(87)= 0.0718	CP(50)= 0.0064	CP(13)= 0.0813	CP(123)=-0.0108
CP(88)= 0.0439	CP(51)=-0.0460	CP(14)= 0.0580	CP(124)=-0.0487
CP(89)= 0.0187	CP(52)=-0.0588	CP(15)= 0.0333	CP(125)=-0.0633
CP(90)=-0.0333	CP(53)=-0.0646	CP(16)=-0.0050	CP(126)=-0.0666
CP(91)=-0.0479	CP(54)=-0.0724	CP(17)=-0.0433	CP(127)=-0.0752
CP(92)=-0.0626	CP(55)=-0.0748	CP(18)=-0.0624	CP(128)=-0.0694
CP(93)=-0.0707	CP(56)=-0.0822	CP(19)=-0.0658	CP(129)=-0.0743
CP(94)=-0.0721	CP(57)=-0.0670	CP(20)=-0.0787	CP(130)=-0.0685
CP(95)=-0.0712	CP(58)=-0.0640	CP(21)=-0.0722	CP(131)=-0.0647
CP(96)=-0.0686	CP(59)=-0.0625	CP(22)=-0.0714	CP(132)=-0.0738
CP(97)=-0.0636	CP(133)=-0.0913	CP(23)=-0.0648	CP(60)=-0.0925
CP(98)=-0.0702	CP(134)=-0.0856	CP(24)=-0.0672	CP(61)=-0.0978
CP(99)=-0.0803	CP(135)=-0.0716	CP(25)=-0.0679	CP(62)=-0.0848
CP(100)=-0.0981	CP(136)=-0.0553	CP(26)=-0.0757	CP(63)=-0.0519
CP(101)=-0.0871	CP(137)=-0.0573	CP(27)=-0.0965	CP(64)=-0.0500
CP(102)=-0.0728	CP(138)=-0.0504	CP(28)=-0.0932	CP(65)=-0.0470
CP(103)=-0.0590	CP(139)=-0.0624	CP(29)=-0.0829	CP(66)=-0.0600
CP(104)=-0.0614	CP(140)=-0.0541	CP(30)=-0.0481	CP(67)=-0.0543
CP(105)=-0.0509	CP(141)=-0.0021	CP(31)=-0.0550	CP(68)=-0.0342
CP(106)=-0.0220	CP(142)= 0.0235	CP(32)=-0.0627	CP(69)=-0.0017
CP(107)= 0.0068	CP(143)= 0.0071	CP(33)=-0.0037	CP(70)= 0.0235
CP(108)= 0.0054	CP(144)=-0.0093	CP(34)= 0.0256	CP(71)=-0.0070
CP(109)=-0.0432	CP(145)=-0.0265	CP(35)=-0.0220	CP(72)=-0.0289
CP(110)=-0.0554	CP(146)=-0.0490	CP(36)=-0.0421	CP(73)=-0.0394
CP(174)=-0.0494	CP(161)=-0.1275	CP(37)=-0.0304	CP(74)=-0.0414
CP(175)=-0.1042	CP(162)=-0.2139	CP(147)=-0.0752	CP(187)=-0.0862
CP(176)=-0.2166	CP(163)=-0.2083	CP(148)=-0.1547	CP(188)=-0.2118
CP(177)=-0.2061	CP(164)=-0.1704	CP(149)=-0.2179	CP(189)=-0.2091
CP(178)=-0.1805	CP(165)=-0.1412	CP(150)=-0.1926	CP(190)=-0.1912
CP(179)=-0.1511	CP(166)=-0.1063	CP(151)=-0.1664	CP(191)=-0.1631
CP(180)=-0.1185	CP(167)=-0.0691	CP(152)=-0.1379	CP(192)=-0.1312
CP(181)=-0.0782	CP(168)=-0.0230	CP(153)=-0.1043	CP(193)=-0.0910
CP(182)=-0.0380	CP(169)= 0.0147	CP(154)=-0.0589	CP(194)=-0.0486
CP(183)= 0.0022	CP(170)= 0.0523	CP(155)=-0.0198	CP(195)=-0.0129
CP(184)= 0.0400	CP(171)= 0.0832	CP(156)= 0.0193	CP(196)= 0.0365
CP(185)= 0.0728	CP(172)= 0.1141	CP(157)= 0.0585	CP(197)= 0.0672
CP(186)= 0.1145	CP(173)= 0.1310	CP(158)= 0.0887	CP(198)= 0.0978
		CP(159)= 0.1217	CP(199)= 0.1289
		CP(160)=-0.0556	

CPB1= 0.1556 CPB2= 0.1565 CPB3= 0.1555 CPB4= 0.1575

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.600 PT=2554.910PSF P1=2002.875PSF Q= 504.924PSF RE= 4.001X 10**-6/FT

CP(75)= 0.2927	CP(38)= 0.4015	CP(1)= 0.2875	CP(111)= 0.3649
CP(76)= 0.1190	CP(39)= 0.2499	CP(2)= 0.1983	CP(112)= 0.1165
CP(77)= 0.0541	CP(40)= 0.0909	CP(3)= 0.1206	CP(113)= 0.0284
CP(78)= 0.0008	CP(41)= 0.0124	CP(4)= 0.0430	CP(114)= 0.0067
CP(79)= 0.0185	CP(42)= 0.0043	CP(5)= 0.0215	CP(115)=-0.0150
CP(80)=-0.0002	CP(43)=-0.0039	CP(6)= 0.0092	CP(116)= 0.0056
CP(81)= 0.0037	CP(44)= 0.0126	CP(7)= 0.0081	CP(117)= 0.0262
CP(82)= 0.0016	CP(45)= 0.0463	CP(8)= 0.0116	CP(118)= 0.0504
CP(83)= 0.0170	CP(46)= 0.0741	CP(9)= 0.0198	CP(119)= 0.0846
CP(84)= 0.0324	CP(47)= 0.0796	CP(10)= 0.0317	CP(120)= 0.0765
CP(85)= 0.0645	CP(48)= 0.0658	CP(11)= 0.0669	CP(121)= 0.0555
CP(86)= 0.0686	CP(49)= 0.0390	CP(12)= 0.0853	CP(122)= 0.0264
CP(87)= 0.0728	CP(50)= 0.0041	CP(13)= 0.0845	CP(123)=-0.0118
CP(88)= 0.0448	CP(51)=-0.0494	CP(14)= 0.0609	CP(124)=-0.0501
CP(89)= 0.0202	CP(52)=-0.0617	CP(15)= 0.0360	CP(125)=-0.0643
CP(90)=-0.0325	CP(53)=-0.0655	CP(16)=-0.0025	CP(126)=-0.0682
CP(91)=-0.0472	CP(54)=-0.0739	CP(17)=-0.0409	CP(127)=-0.0768
CP(92)=-0.0619	CP(55)=-0.0760	CP(18)=-0.0615	CP(128)=-0.0705
CP(93)=-0.0692	CP(56)=-0.0858	CP(19)=-0.0627	CP(129)=-0.0768
CP(94)=-0.0718	CP(57)=-0.0681	CP(20)=-0.0768	CP(130)=-0.0703
CP(95)=-0.0709	CP(58)=-0.0649	CP(21)=-0.0702	CP(131)=-0.0643
CP(96)=-0.0672	CP(59)=-0.0634	CP(22)=-0.0688	CP(132)=-0.0732
CP(97)=-0.0620	CP(133)=-0.0930	CP(23)=-0.0621	CP(60)=-0.0934
CP(98)=-0.0705	CP(134)=-0.0865	CP(24)=-0.0649	CP(61)=-0.0990
CP(99)=-0.0811	CP(135)=-0.0722	CP(25)=-0.0662	CP(62)=-0.0850
CP(100)=-0.0978	CP(136)=-0.0551	CP(26)=-0.0737	CP(63)=-0.0518
CP(101)=-0.0871	CP(137)=-0.0594	CP(27)=-0.0948	CP(64)=-0.0505
CP(102)=-0.0711	CP(138)=-0.0512	CP(28)=-0.0946	CP(65)=-0.0479
CP(103)=-0.0573	CP(139)=-0.0634	CP(29)=-0.0852	CP(66)=-0.0620
CP(104)=-0.0617	CP(140)=-0.0552	CP(30)=-0.0459	CP(67)=-0.0550
CP(105)=-0.0499	CP(141)=-0.0029	CP(31)=-0.0538	CP(68)=-0.0348
CP(106)=-0.0208	CP(142)= 0.0235	CP(32)=-0.0623	CP(69)=-0.0020
CP(107)= 0.0083	CP(143)= 0.0064	CP(33)=-0.0024	CP(70)= 0.0235
CP(108)= 0.0070	CP(144)=-0.0106	CP(34)= 0.0269	CP(71)=-0.0082
CP(109)=-0.0426	CP(145)=-0.0278	CP(35)=-0.0223	CP(72)=-0.0302
CP(110)=-0.0546	CP(146)=-0.0507	CP(36)=-0.0422	CP(73)=-0.0400
CP(174)=-0.0491	CP(161)=-0.1287	CP(37)=-0.0287	CP(74)=-0.0431
CP(175)=-0.1017	CP(162)=-0.2162	CP(147)=-0.0734	CP(187)=-0.0871
CP(176)=-0.2169	CP(163)=-0.2123	CP(148)=-0.1546	CP(188)=-0.2184
CP(177)=-0.2057	CP(164)=-0.1722	CP(149)=-0.2222	CP(189)=-0.2138
CP(178)=-0.1805	CP(165)=-0.1442	CP(150)=-0.1944	CP(190)=-0.1964
CP(179)=-0.1501	CP(166)=-0.1091	CP(151)=-0.1691	CP(191)=-0.1692
CP(180)=-0.1194	CP(167)=-0.0720	CP(152)=-0.1414	CP(192)=-0.1375
CP(181)=-0.0790	CP(168)=-0.0248	CP(153)=-0.1090	CP(193)=-0.0956
CP(182)=-0.0394	CP(169)= 0.0128	CP(154)=-0.0609	CP(194)=-0.0551
CP(183)= 0.0002	CP(170)= 0.0505	CP(155)=-0.0215	CP(195)=-0.0186
CP(184)= 0.0394	CP(171)= 0.0810	CP(156)= 0.0186	CP(196)= 0.0356
CP(185)= 0.0724	CP(172)= 0.1137	CP(157)= 0.0586	CP(197)= 0.0654
CP(186)= 0.1147	CP(173)= 0.1267	CP(158)= 0.0884	CP(198)= 0.0953
		CP(159)= 0.1219	CP(199)= 0.1275
		CP(160)=-0.0523	

CPB1= 0.1587 CPB2= 0.1561 CPB3= 0.1576 CPB4= 0.1560

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.601 PT=3388.040PSF P1=2654.025PSF Q= 671.185PSF RE= 5.310X 10**-6/FT

CP(75)= 0.2933	CP(38)= 0.4009	CP(1)= 0.2892	CP(111)= 0.3592
CP(76)= 0.1135	CP(39)= 0.2496	CP(2)= 0.1992	CP(112)= 0.1120
CP(77)= 0.0454	CP(40)= 0.0926	CP(3)= 0.1212	CP(113)= 0.0267
CP(78)=-0.0054	CP(41)= 0.0107	CP(4)= 0.0432	CP(114)= 0.0062
CP(79)= 0.0177	CP(42)= 0.0036	CP(5)= 0.0221	CP(115)=-0.0143
CP(80)=-0.0015	CP(43)=-0.0036	CP(6)= 0.0102	CP(116)= 0.0070
CP(81)= 0.0028	CP(44)= 0.0155	CP(7)= 0.0092	CP(117)= 0.0284
CP(82)= 0.0008	CP(45)= 0.0478	CP(8)= 0.0129	CP(118)= 0.0529
CP(83)= 0.0164	CP(46)= 0.0755	CP(9)= 0.0211	CP(119)= 0.0872
CP(84)= 0.0320	CP(47)= 0.0813	CP(10)= 0.0321	CP(120)= 0.0788
CP(85)= 0.0640	CP(48)= 0.0672	CP(11)= 0.0679	CP(121)= 0.0580
CP(86)= 0.0681	CP(49)= 0.0404	CP(12)= 0.0870	CP(122)= 0.0293
CP(87)= 0.0722	CP(50)= 0.0048	CP(13)= 0.0863	CP(123)=-0.0095
CP(88)= 0.0441	CP(51)=-0.0499	CP(14)= 0.0623	CP(124)=-0.0483
CP(89)= 0.0194	CP(52)=-0.0609	CP(15)= 0.0367	CP(125)=-0.0628
CP(90)=-0.0336	CP(53)=-0.0641	CP(16)=-0.0016	CP(126)=-0.0665
CP(91)=-0.0478	CP(54)=-0.0725	CP(17)=-0.0399	CP(127)=-0.0751
CP(92)=-0.0619	CP(55)=-0.0743	CP(18)=-0.0604	CP(128)=-0.0684
CP(93)=-0.0691	CP(56)=-0.0859	CP(19)=-0.0613	CP(129)=-0.0761
CP(94)=-0.0709	CP(57)=-0.0664	CP(20)=-0.0756	CP(130)=-0.0697
CP(95)=-0.0697	CP(58)=-0.0634	CP(21)=-0.0689	CP(131)=-0.0631
CP(96)=-0.0660	CP(59)=-0.0609	CP(22)=-0.0673	CP(132)=-0.0725
CP(97)=-0.0606	CP(133)=-0.0912	CP(23)=-0.0608	CP(60)=-0.0923
CP(98)=-0.0698	CP(134)=-0.0850	CP(24)=-0.0638	CP(61)=-0.0978
CP(99)=-0.0812	CP(135)=-0.0715	CP(25)=-0.0653	CP(62)=-0.0835
CP(100)=-0.0968	CP(136)=-0.0538	CP(26)=-0.0734	CP(63)=-0.0497
CP(101)=-0.0866	CP(137)=-0.0599	CP(27)=-0.0942	CP(64)=-0.0485
CP(102)=-0.0697	CP(138)=-0.0492	CP(28)=-0.0958	CP(65)=-0.0467
CP(103)=-0.0559	CP(139)=-0.0622	CP(29)=-0.0871	CP(66)=-0.0614
CP(104)=-0.0618	CP(140)=-0.0539	CP(30)=-0.0451	CP(67)=-0.0533
CP(105)=-0.0487	CP(141)=-0.0009	CP(31)=-0.0530	CP(68)=-0.0333
CP(106)=-0.0196	CP(142)= 0.0252	CP(32)=-0.0620	CP(69)=-0.0005
CP(107)= 0.0095	CP(143)= 0.0078	CP(33)=-0.0020	CP(70)= 0.0252
CP(108)= 0.0077	CP(144)=-0.0097	CP(34)= 0.0277	CP(71)=-0.0076
CP(109)=-0.0418	CP(145)=-0.0277	CP(35)=-0.0231	CP(72)=-0.0302
CP(110)=-0.0539	CP(146)=-0.0495	CP(36)=-0.0426	CP(73)=-0.0394
CP(174)=-0.0489	CP(161)=-0.1282	CP(37)=-0.0271	CP(74)=-0.0432
CP(175)=-0.1008	CP(162)=-0.2163	CP(147)=-0.0729	CP(187)=-0.0858
CP(176)=-0.2162	CP(163)=-0.2134	CP(148)=-0.1558	CP(188)=-0.2206
CP(177)=-0.2052	CP(164)=-0.1726	CP(149)=-0.2242	CP(189)=-0.2152
CP(178)=-0.1804	CP(165)=-0.1443	CP(150)=-0.1961	CP(190)=-0.1970
CP(179)=-0.1498	CP(166)=-0.1096	CP(151)=-0.1714	CP(191)=-0.1704
CP(180)=-0.1197	CP(167)=-0.0727	CP(152)=-0.1452	CP(192)=-0.1387
CP(181)=-0.0782	CP(168)=-0.0247	CP(153)=-0.1129	CP(193)=-0.0963
CP(182)=-0.0388	CP(169)= 0.0130	CP(154)=-0.0631	CP(194)=-0.0566
CP(183)= 0.0006	CP(170)= 0.0508	CP(155)=-0.0238	CP(195)=-0.0195
CP(184)= 0.0393	CP(171)= 0.0811	CP(156)= 0.0166	CP(196)= 0.0373
CP(185)= 0.0733	CP(172)= 0.1145	CP(157)= 0.0570	CP(197)= 0.0671
CP(186)= 0.1134	CP(173)= 0.1237	CP(158)= 0.0867	CP(198)= 0.0969
		CP(159)= 0.1207	CP(199)= 0.1270
		CP(160)=-0.0507	

CPB1= 0.1582 CPB2= 0.1573 CPB3= 0.1579 CPB4= 0.1582

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.895 PT= 748.780PSF P1= 444.994PSF Q= 249.668PSF RE= 1.463X 10**-6/FT

CP(75)= 0.3744	CP(38)= 0.4844	CP(1)= 0.3645	CP(111)= 0.4656
CP(76)= 0.2199	CP(39)= 0.3057	CP(2)= 0.2479	CP(112)= 0.1778
CP(77)= 0.1119	CP(40)= 0.1119	CP(3)= 0.1563	CP(113)= 0.0428
CP(78)= 0.0397	CP(41)= 0.0143	CP(4)= 0.0647	CP(114)= 0.0175
CP(79)= 0.0247	CP(42)= 0.0067	CP(5)= 0.0221	CP(115)=-0.0079
CP(80)=-0.0006	CP(43)=-0.0009	CP(6)= 0.0022	CP(116)= 0.0145
CP(81)= 0.0040	CP(44)= 0.0025	CP(7)= 0.0034	CP(117)= 0.0368
CP(82)= 0.0031	CP(45)= 0.0734	CP(8)= 0.0071	CP(118)= 0.0708
CP(83)= 0.0259	CP(46)= 0.1142	CP(9)= 0.0224	CP(119)= 0.1178
CP(84)= 0.0486	CP(47)= 0.1203	CP(10)= 0.0452	CP(120)= 0.1123
CP(85)= 0.0954	CP(48)= 0.1030	CP(11)= 0.0950	CP(121)= 0.0882
CP(86)= 0.1033	CP(49)= 0.0723	CP(12)= 0.1199	CP(122)= 0.0489
CP(87)= 0.1111	CP(50)= 0.0276	CP(13)= 0.1190	CP(123)=-0.0011
CP(88)= 0.0781	CP(51)=-0.0441	CP(14)= 0.0909	CP(124)=-0.0511
CP(89)= 0.0429	CP(52)=-0.0677	CP(15)= 0.0610	CP(125)=-0.0744
CP(90)=-0.0311	CP(53)=-0.0810	CP(16)= 0.0044	CP(126)=-0.0834
CP(91)=-0.0558	CP(54)=-0.0954	CP(17)=-0.0522	CP(127)=-0.0961
CP(92)=-0.0805	CP(55)=-0.0938	CP(18)=-0.0796	CP(128)=-0.0891
CP(93)=-0.0918	CP(56)=-0.0980	CP(19)=-0.0859	CP(129)=-0.0895
CP(94)=-0.0920	CP(57)=-0.0808	CP(20)=-0.1039	CP(130)=-0.0781
CP(95)=-0.0901	CP(58)=-0.0739	CP(21)=-0.0920	CP(131)=-0.0771
CP(96)=-0.0834	CP(59)=-0.0749	CP(22)=-0.0893	CP(132)=-0.0877
CP(97)=-0.0727	CP(133)=-0.1192	CP(23)=-0.0761	CP(60)=-0.1213
CP(98)=-0.0774	CP(134)=-0.1117	CP(24)=-0.0782	CP(61)=-0.1312
CP(99)=-0.0938	CP(135)=-0.0863	CP(25)=-0.0793	CP(62)=-0.1110
CP(100)=-0.1344	CP(136)=-0.0661	CP(26)=-0.0924	CP(63)=-0.0616
CP(101)=-0.1133	CP(137)=-0.0613	CP(27)=-0.1324	CP(64)=-0.0597
CP(102)=-0.0874	CP(138)=-0.0554	CP(28)=-0.1147	CP(65)=-0.0542
CP(103)=-0.0662	CP(139)=-0.0754	CP(29)=-0.0925	CP(66)=-0.0735
CP(104)=-0.0669	CP(140)=-0.0669	CP(30)=-0.0505	CP(67)=-0.0666
CP(105)=-0.0562	CP(141)= 0.0123	CP(31)=-0.0626	CP(68)=-0.0335
CP(106)=-0.0139	CP(142)= 0.0469	CP(32)=-0.0761	CP(69)= 0.0103
CP(107)= 0.0285	CP(143)= 0.0274	CP(33)= 0.0106	CP(70)= 0.0469
CP(108)= 0.0285	CP(144)= 0.0080	CP(34)= 0.0515	CP(71)= 0.0106
CP(109)=-0.0379	CP(145)=-0.0211	CP(35)=-0.0101	CP(72)=-0.0211
CP(110)=-0.0532	CP(146)=-0.0492	CP(36)=-0.0398	CP(73)=-0.0381
CP(174)=-0.0356	CP(161)=-0.1548	CP(37)=-0.0216	CP(74)=-0.0331
CP(175)=-0.1214	CP(162)=-0.3737	CP(147)=-0.0789	CP(187)=-0.0935
CP(176)=-0.3627	CP(163)=-0.3052	CP(148)=-0.1977	CP(188)=-0.3165
CP(177)=-0.3286	CP(164)=-0.2176	CP(149)=-0.3847	CP(189)=-0.3812
CP(178)=-0.2347	CP(165)=-0.1592	CP(150)=-0.2655	CP(190)=-0.2540
CP(179)=-0.1744	CP(166)=-0.1004	CP(151)=-0.2028	CP(191)=-0.1932
CP(180)=-0.1157	CP(167)=-0.0435	CP(152)=-0.1439	CP(192)=-0.1340
CP(181)=-0.0583	CP(168)= 0.0123	CP(153)=-0.0870	CP(193)=-0.0750
CP(182)=-0.0089	CP(169)= 0.0534	CP(154)=-0.0292	CP(194)=-0.0145
CP(183)= 0.0406	CP(170)= 0.0944	CP(155)= 0.0192	CP(195)= 0.0279
CP(184)= 0.0836	CP(171)= 0.1267	CP(156)= 0.0601	CP(196)= 0.0731
CP(185)= 0.1171	CP(172)= 0.1555	CP(157)= 0.1010	CP(197)= 0.1065
CP(186)= 0.1559	CP(173)= 0.1810	CP(158)= 0.1330	CP(198)= 0.1399
		CP(159)= 0.1622	CP(199)= 0.1698
		CP(160)=-0.0530	

CPB1= 0.1887 CPB2= 0.1893 CPB3= 0.1886 CPB4= 0.1901

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.896 PT=1273.180PSF P1= 755.794PSF Q= 425.029PSF RE= 2.494X 10**-6/FT

CP(75)= 0.3680	CP(38)= 0.4830	CP(1)= 0.3598	CP(111)= 0.4577
CP(76)= 0.1874	CP(39)= 0.3014	CP(2)= 0.2502	CP(112)= 0.1709
CP(77)= 0.1032	CP(40)= 0.1091	CP(3)= 0.1554	CP(113)= 0.0413
CP(78)= 0.0295	CP(41)= 0.0099	CP(4)= 0.0606	CP(114)= 0.0146
CP(79)= 0.0222	CP(42)= 0.0071	CP(5)= 0.0185	CP(115)=-0.0121
CP(80)=-0.0015	CP(43)= 0.0043	CP(6)= 0.0036	CP(116)= 0.0128
CP(81)= 0.0051	CP(44)= 0.0041	CP(7)= 0.0038	CP(117)= 0.0378
CP(82)= 0.0056	CP(45)= 0.0725	CP(8)= 0.0111	CP(118)= 0.0734
CP(83)= 0.0280	CP(46)= 0.1123	CP(9)= 0.0268	CP(119)= 0.1225
CP(84)= 0.0503	CP(47)= 0.1209	CP(10)= 0.0473	CP(120)= 0.1155
CP(85)= 0.0936	CP(48)= 0.1034	CP(11)= 0.0935	CP(121)= 0.0887
CP(86)= 0.0992	CP(49)= 0.0707	CP(12)= 0.1164	CP(122)= 0.0522
CP(87)= 0.1048	CP(50)= 0.0236	CP(13)= 0.1155	CP(123)=-0.0031
CP(88)= 0.0700	CP(51)=-0.0514	CP(14)= 0.0860	CP(124)=-0.0584
CP(89)= 0.0363	CP(52)=-0.0745	CP(15)= 0.0547	CP(125)=-0.0810
CP(90)=-0.0362	CP(53)=-0.0847	CP(16)=-0.0006	CP(126)=-0.0868
CP(91)=-0.0589	CP(54)=-0.0982	CP(17)=-0.0559	CP(127)=-0.0997
CP(92)=-0.0815	CP(55)=-0.0961	CP(18)=-0.0821	CP(128)=-0.0898
CP(93)=-0.0931	CP(56)=-0.1011	CP(19)=-0.0879	CP(129)=-0.0909
CP(94)=-0.0933	CP(57)=-0.0806	CP(20)=-0.1048	CP(130)=-0.0793
CP(95)=-0.0908	CP(58)=-0.0736	CP(21)=-0.0926	CP(131)=-0.0764
CP(96)=-0.0840	CP(59)=-0.0739	CP(22)=-0.0899	CP(132)=-0.0870
CP(97)=-0.0753	CP(133)=-0.1229	CP(23)=-0.0799	CP(60)=-0.1249
CP(98)=-0.0811	CP(134)=-0.1136	CP(24)=-0.0824	CP(61)=-0.1362
CP(99)=-0.0952	CP(135)=-0.0870	CP(25)=-0.0819	CP(62)=-0.1132
CP(100)=-0.1359	CP(136)=-0.0638	CP(26)=-0.0924	CP(63)=-0.0603
CP(101)=-0.1108	CP(137)=-0.0614	CP(27)=-0.1315	CP(64)=-0.0556
CP(102)=-0.0873	CP(138)=-0.0538	CP(28)=-0.1164	CP(65)=-0.0519
CP(103)=-0.0671	CP(139)=-0.0759	CP(29)=-0.0965	CP(66)=-0.0740
CP(104)=-0.0699	CP(140)=-0.0673	CP(30)=-0.0519	CP(67)=-0.0676
CP(105)=-0.0573	CP(141)= 0.0146	CP(31)=-0.0631	CP(68)=-0.0330
CP(106)=-0.0145	CP(142)= 0.0498	CP(32)=-0.0745	CP(69)= 0.0143
CP(107)= 0.0283	CP(143)= 0.0285	CP(33)= 0.0127	CP(70)= 0.0498
CP(108)= 0.0275	CP(144)= 0.0071	CP(34)= 0.0512	CP(71)= 0.0099
CP(109)=-0.0400	CP(145)=-0.0206	CP(35)=-0.0120	CP(72)=-0.0219
CP(110)=-0.0542	CP(146)=-0.0492	CP(36)=-0.0417	CP(73)=-0.0378
CP(174)=-0.0388	CP(161)=-0.1554	CP(37)=-0.0217	CP(74)=-0.0329
CP(175)=-0.1266	CP(162)=-0.3921	CP(147)=-0.0802	CP(187)=-0.0918
CP(176)=-0.3746	CP(163)=-0.3439	CP(148)=-0.2101	CP(188)=-0.3309
CP(177)=-0.3759	CP(164)=-0.2156	CP(149)=-0.4095	CP(189)=-0.4116
CP(178)=-0.2334	CP(165)=-0.1597	CP(150)=-0.2752	CP(190)=-0.2529
CP(179)=-0.1751	CP(166)=-0.1022	CP(151)=-0.2037	CP(191)=-0.1936
CP(180)=-0.1185	CP(167)=-0.0461	CP(152)=-0.1471	CP(192)=-0.1374
CP(181)=-0.0609	CP(168)= 0.0117	CP(153)=-0.0917	CP(193)=-0.0779
CP(182)=-0.0109	CP(169)= 0.0535	CP(154)=-0.0313	CP(194)=-0.0171
CP(183)= 0.0392	CP(170)= 0.0953	CP(155)= 0.0114	CP(195)= 0.0244
CP(184)= 0.0814	CP(171)= 0.1295	CP(156)= 0.0564	CP(196)= 0.0752
CP(185)= 0.1184	CP(172)= 0.1609	CP(157)= 0.1014	CP(197)= 0.1096
CP(186)= 0.1599	CP(173)= 0.1854	CP(158)= 0.1349	CP(198)= 0.1440
		CP(159)= 0.1668	CP(199)= 0.1758
		CP(160)=-0.0505	

CPB1= 0.1964 CPB2= 0.1979 CPB3= 0.1965 CPB4= 0.1987

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.899 PT=2079.140PSF P1=1230.600PSF Q= 696.254PSF RE= 4.083X 10**-6/FT

CP(75)= 0.3655
CP(76)= 0.1723
CP(77)= 0.0915
CP(78)= 0.0210
CP(79)= 0.0263
CP(80)=-0.0014
CP(81)= 0.0040
CP(82)= 0.0015
CP(83)= 0.0241
CP(84)= 0.0466
CP(85)= 0.0940
CP(86)= 0.1024
CP(87)= 0.1108
CP(88)= 0.0771
CP(89)= 0.0435
CP(90)=-0.0329
CP(91)=-0.0566
CP(92)=-0.0803
CP(93)=-0.0926
CP(94)=-0.0936
CP(95)=-0.0905
CP(96)=-0.0827
CP(97)=-0.0729
CP(98)=-0.0810
CP(99)=-0.0954
CP(100)=-0.1398
CP(101)=-0.1170
CP(102)=-0.0870
CP(103)=-0.0652
CP(104)=-0.0710
CP(105)=-0.0590
CP(106)=-0.0143
CP(107)= 0.0303
CP(108)= 0.0296
CP(109)=-0.0397
CP(110)=-0.0534
CP(174)=-0.0359
CP(175)=-0.1141
CP(176)=-0.3741
CP(177)=-0.4211
CP(178)=-0.2343
CP(179)=-0.1740
CP(180)=-0.1198
CP(181)=-0.0615
CP(182)=-0.0106
CP(183)= 0.0403
CP(184)= 0.0451
CP(185)= 0.1219
CP(186)= 0.1653

CP(38)= 0.4832
CP(39)= 0.3154
CP(40)= 0.1230
CP(41)= 0.0179
CP(42)= 0.0084
CP(43)=-0.0010
CP(44)= 0.0050
CP(45)= 0.0689
CP(46)= 0.1092
CP(47)= 0.1191
CP(48)= 0.1017
CP(49)= 0.0690
CP(50)= 0.0224
CP(51)=-0.0543
CP(52)=-0.0767
CP(53)=-0.0849
CP(54)=-0.0984
CP(55)=-0.0964
CP(56)=-0.1041
CP(57)=-0.0807
CP(58)=-0.0736
CP(59)=-0.0732
CP(133)=-0.1239
CP(134)=-0.1138
CP(135)=-0.0869
CP(136)=-0.0620
CP(137)=-0.0624
CP(138)=-0.0533
CP(139)=-0.0761
CP(140)=-0.0676
CP(141)= 0.0150
CP(142)= 0.0513
CP(143)= 0.0291
CP(144)= 0.0048
CP(145)=-0.0210
CP(146)=-0.0496
CP(161)=-0.1533
CP(162)=-0.3957
CP(163)=-0.3745
CP(164)=-0.2153
CP(165)=-0.1611
CP(166)=-0.1050
CP(167)=-0.0495
CP(168)= 0.0097
CP(169)= 0.0526
CP(170)= 0.0955
CP(171)= 0.1306
CP(172)= 0.1635
CP(173)= 0.1859

CP(1)= 0.3597
CP(2)= 0.2526
CP(3)= 0.1564
CP(4)= 0.0603
CP(5)= 0.0235
CP(6)= 0.0048
CP(7)= 0.0045
CP(8)= 0.0079
CP(9)= 0.0223
CP(10)= 0.0435
CP(11)= 0.0937
CP(12)= 0.1196
CP(13)= 0.1214
CP(14)= 0.0930
CP(15)= 0.0615
CP(16)= 0.0045
CP(17)=-0.0526
CP(18)=-0.0812
CP(19)=-0.0860
CP(20)=-0.1060
CP(21)=-0.0927
CP(22)=-0.0900
CP(23)=-0.0764
CP(24)=-0.0793
CP(25)=-0.0796
CP(26)=-0.0936
CP(27)=-0.1370
CP(28)=-0.1230
CP(29)=-0.1011
CP(30)=-0.0504
CP(31)=-0.0636
CP(32)=-0.0788
CP(33)= 0.0132
CP(34)= 0.0550
CP(35)=-0.0112
CP(36)=-0.0409
CP(37)=-0.0180
CP(147)=-0.0721
CP(148)=-0.1945
CP(149)=-0.4218
CP(150)=-0.3193
CP(151)=-0.2015
CP(152)=-0.1487
CP(153)=-0.0945
CP(154)=-0.0328
CP(155)= 0.0164
CP(156)= 0.0608
CP(157)= 0.1051
CP(158)= 0.1393
CP(159)= 0.1725
CP(160)=-0.0470

CP(111)= 0.4434
CP(112)= 0.1635
CP(113)= 0.0400
CP(114)= 0.0117
CP(115)=-0.0166
CP(116)= 0.0100
CP(117)= 0.0367
CP(118)= 0.0723
CP(119)= 0.1221
CP(120)= 0.1146
CP(121)= 0.0884
CP(122)= 0.0517
CP(123)=-0.0046
CP(124)=-0.0610
CP(125)=-0.0829
CP(126)=-0.0886
CP(127)=-0.1010
CP(128)=-0.0902
CP(129)=-0.0927
CP(130)=-0.0808
CP(131)=-0.0759
CP(132)=-0.0861
CP(60)=-0.1270
CP(61)=-0.1378
CP(62)=-0.1134
CP(63)=-0.0601
CP(64)=-0.0553
CP(65)=-0.0522
CP(66)=-0.0754
CP(67)=-0.0677
CP(68)=-0.0336
CP(69)= 0.0153
CP(70)= 0.0513
CP(71)= 0.0088
CP(72)=-0.0230
CP(73)=-0.0378
CP(74)=-0.0331
CP(187)=-0.0893
CP(188)=-0.3363
CP(189)=-0.4210
CP(190)=-0.2548
CP(191)=-0.1942
CP(192)=-0.1399
CP(193)=-0.0799
CP(194)=-0.0200
CP(195)= 0.0226
CP(196)= 0.0777
CP(197)= 0.1120
CP(198)= 0.1463
CP(199)= 0.1791

CPB1= 0.2040 CPB2= 0.2031 CPB3= 0.2042 CPB4= 0.2030

15-DEGREE BOATTAIL CONFIGURATION

MACH=0.899 PT=2695.780PSF P1=1594.916PSF Q= 903.150PSF RE= 5.293X 10**-6/FT

CP(75)= 0.3652	CP(38)= 0.4842	CP(1)= 0.3649	CP(111)= 0.4399
CP(76)= 0.1697	CP(39)= 0.3154	CP(2)= 0.2522	CP(112)= 0.1577
CP(77)= 0.0871	CP(40)= 0.1239	CP(3)= 0.1556	CP(113)= 0.0388
CP(78)= 0.0159	CP(41)= 0.0144	CP(4)= 0.0589	CP(114)= 0.0097
CP(79)= 0.0265	CP(42)= 0.0056	CP(5)= 0.0223	CP(115)=-0.0195
CP(80)=-0.0016	CP(43)=-0.0033	CP(6)= 0.0044	CP(116)= 0.0084
CP(81)= 0.0040	CP(44)= 0.0053	CP(7)= 0.0045	CP(117)= 0.0363
CP(82)= 0.0019	CP(45)= 0.0690	CP(8)= 0.0086	CP(118)= 0.0728
CP(83)= 0.0245	CP(46)= 0.1101	CP(9)= 0.0235	CP(119)= 0.1235
CP(84)= 0.0470	CP(47)= 0.1204	CP(10)= 0.0439	CP(120)= 0.1158
CP(85)= 0.0947	CP(48)= 0.1035	CP(11)= 0.0945	CP(121)= 0.0893
CP(86)= 0.1029	CP(49)= 0.0700	CP(12)= 0.1205	CP(122)= 0.0523
CP(87)= 0.1110	CP(50)= 0.0229	CP(13)= 0.1224	CP(123)=-0.0050
CP(88)= 0.0771	CP(51)=-0.0563	CP(14)= 0.0937	CP(124)=-0.0623
CP(89)= 0.0438	CP(52)=-0.0784	CP(15)= 0.0615	CP(125)=-0.0844
CP(90)=-0.0333	CP(53)=-0.0862	CP(16)= 0.0047	CP(126)=-0.0896
CP(91)=-0.0567	CP(54)=-0.0993	CP(17)=-0.0522	CP(127)=-0.1027
CP(92)=-0.0801	CP(55)=-0.0966	CP(18)=-0.0807	CP(128)=-0.0913
CP(93)=-0.0919	CP(56)=-0.1068	CP(19)=-0.0855	CP(129)=-0.0948
CP(94)=-0.0928	CP(57)=-0.0816	CP(20)=-0.1059	CP(130)=-0.0828
CP(95)=-0.0899	CP(58)=-0.0742	CP(21)=-0.0922	CP(131)=-0.0766
CP(96)=-0.0822	CP(59)=-0.0731	CP(22)=-0.0891	CP(132)=-0.0870
CP(97)=-0.0720	CP(133)=-0.1261	CP(23)=-0.0757	CP(60)=-0.1295
CP(98)=-0.0811	CP(134)=-0.1155	CP(24)=-0.0787	CP(61)=-0.1405
CP(99)=-0.0955	CP(135)=-0.0878	CP(25)=-0.0790	CP(62)=-0.1146
CP(100)=-0.1395	CP(136)=-0.0619	CP(26)=-0.0928	CP(63)=-0.0600
CP(101)=-0.1151	CP(137)=-0.0640	CP(27)=-0.1363	CP(64)=-0.0554
CP(102)=-0.0859	CP(138)=-0.0534	CP(28)=-0.1240	CP(65)=-0.0522
CP(103)=-0.0644	CP(139)=-0.0772	CP(29)=-0.1027	CP(66)=-0.0766
CP(104)=-0.0713	CP(140)=-0.0681	CP(30)=-0.0496	CP(67)=-0.0680
CP(105)=-0.0584	CP(141)= 0.0164	CP(31)=-0.0629	CP(68)=-0.0331
CP(106)=-0.0133	CP(142)= 0.0534	CP(32)=-0.0782	CP(69)= 0.0169
CP(107)= 0.0317	CP(143)= 0.0304	CP(33)= 0.0149	CP(70)= 0.0534
CP(108)= 0.0308	CP(144)= 0.0074	CP(34)= 0.0565	CP(71)= 0.0094
CP(109)=-0.0389	CP(145)=-0.0209	CP(35)=-0.0109	CP(72)=-0.0228
CP(110)=-0.0527	CP(146)=-0.0502	CP(36)=-0.0407	CP(73)=-0.0375
CP(174)=-0.0350	CP(161)=-0.1519	CP(37)=-0.0160	CP(74)=-0.0326
CP(175)=-0.1119	CP(162)=-0.4005	CP(147)=-0.0702	CP(187)=-0.0878
CP(176)=-0.3744	CP(163)=-0.4271	CP(148)=-0.1950	CP(188)=-0.3414
CP(177)=-0.4277	CP(164)=-0.2132	CP(149)=-0.4234	CP(189)=-0.4337
CP(178)=-0.2355	CP(165)=-0.1585	CP(150)=-0.3405	CP(190)=-0.2756
CP(179)=-0.1720	CP(166)=-0.1036	CP(151)=-0.1993	CP(191)=-0.1907
CP(180)=-0.1195	CP(167)=-0.0486	CP(152)=-0.1481	CP(192)=-0.1377
CP(181)=-0.0609	CP(168)= 0.0114	CP(153)=-0.0951	CP(193)=-0.0783
CP(182)=-0.0099	CP(169)= 0.0550	CP(154)=-0.0321	CP(194)=-0.0188
CP(183)= 0.0411	CP(170)= 0.0987	CP(155)= 0.0175	CP(195)= 0.0244
CP(184)= 0.0867	CP(171)= 0.1339	CP(156)= 0.0626	CP(196)= 0.0822
CP(185)= 0.1242	CP(172)= 0.1679	CP(157)= 0.1077	CP(197)= 0.1164
CP(186)= 0.1685	CP(173)= 0.1900	CP(158)= 0.1419	CP(198)= 0.1507
		CP(159)= 0.1758	CP(199)= 0.1838
		CP(160)=-0.0447	

CP81= 0.2088 CP82= 0.2086 CP83= 0.2090 CP84= 0.2087

15-DEGREE BOATTAIL CONFIGURATION

MACH=1.195 PT= 703.166PSF P1= 291.695PSF Q= 291.801PSF RE= 1.467X 10**-6/FT

CP(75)= 0.4601	CP(38)= 0.5448	CP(1)= 0.4511	CP(111)= 0.5161
CP(76)= 0.3354	CP(39)= 0.4171	CP(2)= 0.3581	CP(112)= 0.2944
CP(77)= 0.2496	CP(40)= 0.2317	CP(3)= 0.2600	CP(113)= 0.1549
CP(78)= 0.1421	CP(41)= 0.0974	CP(4)= 0.1619	CP(114)= 0.1079
CP(79)= 0.1022	CP(42)= 0.0654	CP(5)= 0.1058	CP(115)= 0.0610
CP(80)= 0.0473	CP(43)= 0.0334	CP(6)= 0.0723	CP(116)= 0.0365
CP(81)= 0.0240	CP(44)= 0.0267	CP(7)= 0.0432	CP(117)= 0.0119
CP(82)= 0.0181	CP(45)= 0.0119	CP(8)= 0.0316	CP(118)= 0.0063
CP(83)= 0.0286	CP(46)= 0.0462	CP(9)= 0.0265	CP(119)= 0.0921
CP(84)= 0.0390	CP(47)= 0.1243	CP(10)= 0.0324	CP(120)= 0.1335
CP(85)= 0.0615	CP(48)= 0.1766	CP(11)= 0.0526	CP(121)= 0.1610
CP(86)= 0.1175	CP(49)= 0.1718	CP(12)= 0.0916	CP(122)= 0.1620
CP(87)= 0.1734	CP(50)= 0.1689	CP(13)= 0.1446	CP(123)= 0.1285
CP(88)= 0.1701	CP(51)= 0.1065	CP(14)= 0.1573	CP(124)= 0.0951
CP(89)= 0.1572	CP(52)= 0.0673	CP(15)= 0.1538	CP(125)= 0.0595
CP(90)= 0.1104	CP(53)= 0.0321	CP(16)= 0.1175	CP(126)= 0.0352
CP(91)= 0.0670	CP(54)= 0.0104	CP(17)= 0.0812	CP(127)=-0.0049
CP(92)= 0.0235	CP(55)=-0.0179	CP(18)= 0.0351	CP(128)=-0.0083
CP(93)= 0.0055	CP(56)=-0.0324	CP(19)= 0.0146	CP(129)=-0.0276
CP(94)=-0.0174	CP(57)=-0.0312	CP(20)=-0.0118	CP(130)=-0.0300
CP(95)=-0.0330	CP(58)=-0.0332	CP(21)=-0.0236	CP(131)=-0.0431
CP(96)=-0.0344	CP(59)=-0.0465	CP(22)=-0.0393	CP(132)=-0.0384
CP(97)=-0.0357	CP(133)=-0.0391	CP(23)=-0.0332	CP(60)=-0.0455
CP(98)=-0.0451	CP(134)=-0.0821	CP(24)=-0.0389	CP(61)=-0.0761
CP(99)=-0.0480	CP(135)=-0.0801	CP(25)=-0.0465	CP(62)=-0.0823
CP(100)=-0.0776	CP(136)=-0.0769	CP(26)=-0.0425	CP(63)=-0.0683
CP(101)=-0.0938	CP(137)=-0.0844	CP(27)=-0.0781	CP(64)=-0.0761
CP(102)=-0.0847	CP(138)=-0.0588	CP(28)=-0.0859	CP(65)=-0.0573
CP(103)=-0.0774	CP(139)=-0.0722	CP(29)=-0.0888	CP(66)=-0.0674
CP(104)=-0.0628	CP(140)=-0.0771	CP(30)=-0.0630	CP(67)=-0.0780
CP(105)=-0.0972	CP(141)=-0.0746	CP(31)=-0.0660	CP(68)=-0.1104
CP(106)=-0.0669	CP(142)=-0.0171	CP(32)=-0.0810	CP(69)=-0.0797
CP(107)=-0.0366	CP(143)= 0.0008	CP(33)=-0.0576	CP(70)=-0.0171
CP(108)= 0.0230	CP(144)= 0.0188	CP(34)= 0.0070	CP(71)= 0.0218
CP(109)=-0.0056	CP(145)= 0.0055	CP(35)= 0.0119	CP(72)=-0.0029
CP(110)=-0.0634	CP(146)=-0.0246	CP(36)=-0.0181	CP(73)=-0.0161
CP(174)= 0.0196	CP(161)=-0.0119	CP(37)=-0.0348	CP(74)=-0.0282
CP(175)=-0.0132	CP(162)=-0.1798	CP(147)= 0.0176	CP(187)= 0.0085
CP(176)=-0.1752	CP(163)=-0.2590	CP(148)=-0.0659	CP(188)=-0.1178
CP(177)=-0.2482	CP(164)=-0.2921	CP(149)=-0.2220	CP(189)=-0.2292
CP(178)=-0.2827	CP(165)=-0.3068	CP(150)=-0.2645	CP(190)=-0.2810
CP(179)=-0.3073	CP(166)=-0.3106	CP(151)=-0.2964	CP(191)=-0.2914
CP(180)=-0.3290	CP(167)=-0.3308	CP(152)=-0.3173	CP(192)=-0.3043
CP(181)=-0.3385	CP(168)=-0.3394	CP(153)=-0.3407	CP(193)=-0.3206
CP(182)=-0.3342	CP(169)=-0.2906	CP(154)=-0.3507	CP(194)=-0.3363
CP(183)=-0.3299	CP(170)=-0.2419	CP(155)=-0.3327	CP(195)=-0.3083
CP(184)=-0.2089	CP(171)=-0.1096	CP(156)=-0.2664	CP(196)=-0.2981
CP(185)=-0.1150	CP(172)=-0.0226	CP(157)=-0.2000	CP(197)=-0.1835
CP(186)=-0.0237	CP(173)= 0.0250	CP(158)=-0.0785	CP(198)=-0.0688
		CP(159)=-0.0085	CP(199)= 0.0043
		CP(160)= 0.0176	

CPB1= 0.0356 CPB2= 0.0326 CPB3= 0.0334 CPB4= 0.0332

15-DEGREE BOATTAIL CONFIGURATION

MACH=1.197 PT=1195.870PSF P1= 494.856PSF Q= 496.614PSF RE= 2.498X 10**-6/FT

CP(75)= 0.4516	CP(38)= 0.5423	CP(1)= 0.4421	CP(111)= 0.5103
CP(76)= 0.3188	CP(39)= 0.4087	CP(2)= 0.3650	CP(112)= 0.2840
CP(77)= 0.2176	CP(40)= 0.2343	CP(3)= 0.2698	CP(113)= 0.1558
CP(78)= 0.1400	CP(41)= 0.0965	CP(4)= 0.1747	CP(114)= 0.1053
CP(79)= 0.1129	CP(42)= 0.0636	CP(5)= 0.1176	CP(115)= 0.0547
CP(80)= 0.0702	CP(43)= 0.0308	CP(6)= 0.0810	CP(116)= 0.0332
CP(81)= 0.0317	CP(44)= 0.0267	CP(7)= 0.0457	CP(117)= 0.0117
CP(82)= 0.0159	CP(45)= 0.0124	CP(8)= 0.0362	CP(118)= 0.0050
CP(83)= 0.0264	CP(46)= 0.0510	CP(9)= 0.0295	CP(119)= 0.0941
CP(84)= 0.0369	CP(47)= 0.1384	CP(10)= 0.0263	CP(120)= 0.1423
CP(85)= 0.0532	CP(48)= 0.1757	CP(11)= 0.0403	CP(121)= 0.1611
CP(86)= 0.1103	CP(49)= 0.1733	CP(12)= 0.0833	CP(122)= 0.1729
CP(87)= 0.1675	CP(50)= 0.1645	CP(13)= 0.1388	CP(123)= 0.1312
CP(88)= 0.1691	CP(51)= 0.1011	CP(14)= 0.1576	CP(124)= 0.0895
CP(89)= 0.1702	CP(52)= 0.0590	CP(15)= 0.1603	CP(125)= 0.0438
CP(90)= 0.1130	CP(53)= 0.0314	CP(16)= 0.1241	CP(126)= 0.0226
CP(91)= 0.0714	CP(54)= 0.0102	CP(17)= 0.0880	CP(127)=-0.0077
CP(92)= 0.0298	CP(55)=-0.0228	CP(18)= 0.0439	CP(128)=-0.0122
CP(93)= 0.0078	CP(56)=-0.0452	CP(19)= 0.0222	CP(129)=-0.0314
CP(94)=-0.0124	CP(57)=-0.0295	CP(20)=-0.0072	CP(130)=-0.0371
CP(95)=-0.0327	CP(58)=-0.0273	CP(21)=-0.0212	CP(131)=-0.0405
CP(96)=-0.0321	CP(59)=-0.0475	CP(22)=-0.0374	CP(132)=-0.0357
CP(97)=-0.0353	CP(133)=-0.0369	CP(23)=-0.0333	CP(60)=-0.0459
CP(98)=-0.0427	CP(134)=-0.0830	CP(24)=-0.0345	CP(61)=-0.0786
CP(99)=-0.0440	CP(135)=-0.0866	CP(25)=-0.0386	CP(62)=-0.0855
CP(100)=-0.0820	CP(136)=-0.0766	CP(26)=-0.0371	CP(63)=-0.0699
CP(101)=-0.0879	CP(137)=-0.0753	CP(27)=-0.0857	CP(64)=-0.0716
CP(102)=-0.0888	CP(138)=-0.0645	CP(28)=-0.0910	CP(65)=-0.0499
CP(103)=-0.0785	CP(139)=-0.0703	CP(29)=-0.0911	CP(66)=-0.0692
CP(104)=-0.0619	CP(140)=-0.0807	CP(30)=-0.0629	CP(67)=-0.0766
CP(105)=-0.1001	CP(141)=-0.0745	CP(31)=-0.0602	CP(68)=-0.1142
CP(106)=-0.0704	CP(142)=-0.0176	CP(32)=-0.0795	CP(69)=-0.0817
CP(107)=-0.0408	CP(143)=-0.0003	CP(33)=-0.0658	CP(70)=-0.0176
CP(108)= 0.0225	CP(144)= 0.0170	CP(34)= 0.0068	CP(71)= 0.0224
CP(109)=-0.0047	CP(145)= 0.0050	CP(35)= 0.0076	CP(72)= 0.0041
CP(110)=-0.0680	CP(146)=-0.0265	CP(36)=-0.0090	CP(73)=-0.0189
CP(174)= 0.0111	CP(161)=-0.0078	CP(37)=-0.0465	CP(74)=-0.0537
CP(175)=-0.0009	CP(162)=-0.1870	CP(147)= 0.0152	CP(187)= 0.0075
CP(176)=-0.1644	CP(163)=-0.2662	CP(148)=-0.0434	CP(188)=-0.1238
CP(177)=-0.2422	CP(164)=-0.2979	CP(149)=-0.2150	CP(189)=-0.2324
CP(178)=-0.2810	CP(165)=-0.3249	CP(150)=-0.2610	CP(190)=-0.2940
CP(179)=-0.3100	CP(166)=-0.3338	CP(151)=-0.2978	CP(191)=-0.3121
CP(180)=-0.3296	CP(167)=-0.3282	CP(152)=-0.3183	CP(192)=-0.3213
CP(181)=-0.3474	CP(168)=-0.3343	CP(153)=-0.3395	CP(193)=-0.3194
CP(182)=-0.3452	CP(169)=-0.3052	CP(154)=-0.3519	CP(194)=-0.3383
CP(183)=-0.3430	CP(170)=-0.2762	CP(155)=-0.3365	CP(195)=-0.3243
CP(184)=-0.2731	CP(171)=-0.1604	CP(156)=-0.2940	CP(196)=-0.2957
CP(185)=-0.1641	CP(172)=-0.0419	CP(157)=-0.2515	CP(197)=-0.1970
CP(186)=-0.0342	CP(173)= 0.0244	CP(158)=-0.1010	CP(198)=-0.0983
		CP(159)=-0.0157	CP(199)=-0.0038
		CP(160)= 0.0296	

CPB1= 0.0375 CPB2= 0.0337 CPB3= 0.0355 CPB4= 0.0346

15-DEGREE BOATTAIL CONFIGURATION

MACH=1.199 PT=1914.400PSF P1= 790.493PSF Q= 795.691PSF RE= 3.992X 10**-6/FT

CP(75)= 0.4458	CP(38)= 0.5462	CP(1)= 0.4490	CP(111)= 0.5046
CP(76)= 0.2865	CP(39)= 0.4227	CP(2)= 0.3635	CP(112)= 0.2709
CP(77)= 0.2074	CP(40)= 0.2442	CP(3)= 0.2718	CP(113)= 0.1525
CP(78)= 0.1365	CP(41)= 0.1146	CP(4)= 0.1801	CP(114)= 0.1032
CP(79)= 0.1223	CP(42)= 0.0681	CP(5)= 0.1279	CP(115)= 0.0538
CP(80)= 0.0832	CP(43)= 0.0216	CP(6)= 0.0889	CP(116)= 0.0371
CP(81)= 0.0371	CP(44)= 0.0270	CP(7)= 0.0511	CP(117)= 0.0204
CP(82)= 0.0187	CP(45)= 0.0113	CP(8)= 0.0427	CP(118)= 0.0094
CP(83)= 0.0254	CP(46)= 0.0473	CP(9)= 0.0309	CP(119)= 0.0917
CP(84)= 0.0320	CP(47)= 0.1429	CP(10)= 0.0183	CP(120)= 0.1480
CP(85)= 0.0469	CP(48)= 0.1748	CP(11)= 0.0365	CP(121)= 0.1669
CP(86)= 0.1052	CP(49)= 0.1737	CP(12)= 0.0711	CP(122)= 0.1645
CP(87)= 0.1636	CP(50)= 0.1689	CP(13)= 0.1343	CP(123)= 0.1260
CP(88)= 0.1698	CP(51)= 0.1016	CP(14)= 0.1650	CP(124)= 0.0876
CP(89)= 0.1776	CP(52)= 0.0578	CP(15)= 0.1665	CP(125)= 0.0407
CP(90)= 0.1248	CP(53)= 0.0256	CP(16)= 0.1292	CP(126)= 0.0199
CP(91)= 0.0819	CP(54)= 0.0074	CP(17)= 0.0919	CP(127)=-0.0097
CP(92)= 0.0391	CP(55)=-0.0195	CP(18)= 0.0422	CP(128)=-0.0121
CP(93)= 0.0136	CP(56)=-0.0450	CP(19)= 0.0311	CP(129)=-0.0316
CP(94)=-0.0122	CP(57)=-0.0293	CP(20)=-0.0030	CP(130)=-0.0369
CP(95)=-0.0250	CP(58)=-0.0221	CP(21)=-0.0237	CP(131)=-0.0357
CP(96)=-0.0356	CP(59)=-0.0446	CP(22)=-0.0352	CP(132)=-0.0333
CP(97)=-0.0262	CP(133)=-0.0315	CP(23)=-0.0290	CP(60)=-0.0424
CP(98)=-0.0421	CP(134)=-0.0807	CP(24)=-0.0313	CP(61)=-0.0809
CP(99)=-0.0404	CP(135)=-0.0854	CP(25)=-0.0279	CP(62)=-0.0845
CP(100)=-0.0820	CP(136)=-0.0776	CP(26)=-0.0321	CP(63)=-0.0733
CP(101)=-0.0906	CP(137)=-0.0741	CP(27)=-0.0860	CP(64)=-0.0699
CP(102)=-0.0917	CP(138)=-0.0660	CP(28)=-0.0988	CP(65)=-0.0555
CP(103)=-0.0756	CP(139)=-0.0673	CP(29)=-0.0971	CP(66)=-0.0688
CP(104)=-0.0588	CP(140)=-0.0830	CP(30)=-0.0584	CP(67)=-0.0721
CP(105)=-0.1031	CP(141)=-0.0794	CP(31)=-0.0565	CP(68)=-0.1106
CP(106)=-0.0740	CP(142)=-0.0176	CP(32)=-0.0796	CP(69)=-0.0816
CP(107)=-0.0448	CP(143)= 0.0009	CP(33)=-0.0731	CP(70)=-0.0176
CP(108)= 0.0273	CP(144)= 0.0194	CP(34)= 0.0121	CP(71)= 0.0205
CP(109)=-0.0056	CP(145)= 0.0061	CP(35)= 0.0049	CP(72)= 0.0142
CP(110)=-0.0619	CP(146)=-0.0238	CP(36)=-0.0008	CP(73)=-0.0101
CP(174)=-0.0005	CP(161)= 0.0012	CP(37)=-0.0464	CP(74)=-0.0693
CP(175)= 0.0010	CP(162)=-0.1831	CP(147)= 0.0133	CP(187)= 0.0136
CP(176)=-0.1542	CP(163)=-0.2674	CP(148)=-0.0321	CP(188)=-0.1226
CP(177)=-0.2315	CP(164)=-0.2986	CP(149)=-0.2017	CP(189)=-0.2270
CP(178)=-0.2731	CP(165)=-0.3283	CP(150)=-0.2539	CP(190)=-0.2919
CP(179)=-0.3034	CP(166)=-0.3438	CP(151)=-0.2913	CP(191)=-0.3218
CP(180)=-0.3298	CP(167)=-0.3433	CP(152)=-0.3167	CP(192)=-0.3342
CP(181)=-0.3425	CP(168)=-0.3338	CP(153)=-0.3392	CP(193)=-0.3384
CP(182)=-0.3486	CP(169)=-0.3090	CP(154)=-0.3506	CP(194)=-0.3453
CP(183)=-0.3547	CP(170)=-0.2842	CP(155)=-0.3568	CP(195)=-0.3310
CP(184)=-0.3147	CP(171)=-0.2096	CP(156)=-0.3275	CP(196)=-0.2903
CP(185)=-0.2304	CP(172)=-0.0616	CP(157)=-0.2983	CP(197)=-0.2117
CP(186)=-0.0480	CP(173)= 0.0244	CP(158)=-0.1408	CP(198)=-0.1331
		CP(159)=-0.0223	CP(199)=-0.0119
		CP(160)= 0.0350	

CPB1= 0.0411 CPB2= 0.0379 CPB3= 0.0386 CPB4= 0.0384

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.593 PT= 931.409PSF P1= 734.461PSF Q= 180.960PSF RE= 1.456X 10**-6/FT

CP(75)= 0.2995	CP(38)= 0.4030	CP(1)= 0.2889	CP(111)= 0.3838
CP(76)= 0.1515	CP(39)= 0.2410	CP(2)= 0.1959	CP(112)= 0.1326
CP(77)= 0.0741	CP(40)= 0.0809	CP(3)= 0.1219	CP(113)= 0.0300
CP(78)= 0.0181	CP(41)= 0.0082	CP(4)= 0.0479	CP(114)= 0.0117
CP(79)= 0.0161	CP(42)= 0.0042	CP(5)= 0.0197	CP(115)=-0.0066
CP(80)= 0.0010	CP(43)= 0.0002	CP(6)= 0.0070	CP(116)= 0.0107
CP(81)= 0.0054	CP(44)= 0.0062	CP(7)= 0.0074	CP(117)= 0.0280
CP(82)= 0.0050	CP(45)= 0.0507	CP(8)= 0.0113	CP(118)= 0.0523
CP(83)= 0.0207	CP(46)= 0.0805	CP(9)= 0.0205	CP(119)= 0.0837
CP(84)= 0.0364	CP(47)= 0.0853	CP(10)= 0.0332	CP(120)= 0.0765
CP(85)= 0.0667	CP(48)= 0.0686	CP(11)= 0.0662	CP(121)= 0.0563
CP(86)= 0.0692	CP(49)= 0.0416	CP(12)= 0.0837	CP(122)= 0.0276
CP(87)= 0.0718	CP(50)= 0.0074	CP(13)= 0.0812	CP(123)=-0.0094
CP(88)= 0.0448	CP(51)=-0.0423	CP(14)= 0.0578	CP(124)=-0.0464
CP(89)= 0.0193	CP(52)=-0.0570	CP(15)= 0.0340	CP(125)=-0.0623
CP(90)=-0.0294	CP(53)=-0.0642	CP(16)=-0.0046	CP(126)=-0.0661
CP(91)=-0.0454	CP(54)=-0.0717	CP(17)=-0.0431	CP(127)=-0.0746
CP(92)=-0.0614	CP(55)=-0.0730	CP(18)=-0.0615	CP(128)=-0.0690
CP(93)=-0.0645	CP(56)=-0.0744	CP(19)=-0.0655	CP(129)=-0.0715
CP(94)=-0.0718	CP(57)=-0.0652	CP(20)=-0.0767	CP(130)=-0.0654
CP(95)=-0.0711	CP(58)=-0.0619	CP(21)=-0.0703	CP(131)=-0.0623
CP(96)=-0.0683	CP(59)=-0.0622	CP(22)=-0.0690	CP(132)=-0.0711
CP(97)=-0.0622	CP(133)=-0.0877	CP(23)=-0.0634	CP(60)=-0.0890
CP(98)=-0.0675	CP(134)=-0.0818	CP(24)=-0.0638	CP(61)=-0.0941
CP(99)=-0.0786	CP(135)=-0.0683	CP(25)=-0.0650	CP(62)=-0.0805
CP(100)=-0.0949	CP(136)=-0.0523	CP(26)=-0.0725	CP(63)=-0.0495
CP(101)=-0.0835	CP(137)=-0.0524	CP(27)=-0.0937	CP(64)=-0.0476
CP(102)=-0.0706	CP(138)=-0.0463	CP(28)=-0.0873	CP(65)=-0.0432
CP(103)=-0.0559	CP(139)=-0.0571	CP(29)=-0.0757	CP(66)=-0.0543
CP(104)=-0.0543	CP(140)=-0.0476	CP(30)=-0.0431	CP(67)=-0.0475
CP(105)=-0.0423	CP(141)= 0.0066	CP(31)=-0.0495	CP(68)=-0.0253
CP(106)=-0.0123	CP(142)= 0.0368	CP(32)=-0.0537	CP(69)= 0.0082
CP(107)= 0.0177	CP(143)= 0.0228	CP(33)= 0.0074	CP(70)= 0.0368
CP(108)= 0.0201	CP(144)= 0.0089	CP(34)= 0.0380	CP(71)= 0.0105
CP(109)=-0.0154	CP(145)=-0.0046	CP(35)=-0.0026	CP(72)=-0.0069
CP(110)=-0.0092	CP(146)=-0.0074	CP(36)= 0.0213	CP(73)=-0.0085
		CP(37)= 0.0213	

CPB1=-0.1279 CPB2=-0.1279 CPB3=-0.1291 CPB4=-0.1272

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.598 PT=1802.880PSF PI=1258.221PSF Q= 315.404PSF RE= 2.507X 10**-6/FT

CP(75)= 0.2955	CP(38)= 0.4013	CP(1)= 0.2854	CP(111)= 0.3739
CP(76)= 0.1285	CP(39)= 0.2373	CP(2)= 0.1965	CP(112)= 0.1238
CP(77)= 0.0857	CP(40)= 0.0785	CP(3)= 0.1212	CP(113)= 0.0308
CP(78)= 0.0096	CP(41)= 0.0053	CP(4)= 0.0458	CP(114)= 0.0107
CP(79)= 0.0148	CP(42)= 0.0040	CP(5)= 0.0205	CP(115)=-0.0094
CP(80)= 0.0003	CP(43)= 0.0028	CP(6)= 0.0071	CP(116)= 0.0097
CP(81)= 0.0034	CP(44)= 0.0130	CP(7)= 0.0062	CP(117)= 0.0288
CP(82)= 0.0025	CP(45)= 0.0504	CP(8)= 0.0109	CP(118)= 0.0525
CP(83)= 0.0181	CP(46)= 0.0775	CP(9)= 0.0192	CP(119)= 0.0867
CP(84)= 0.0338	CP(47)= 0.0826	CP(10)= 0.0315	CP(120)= 0.0787
CP(85)= 0.0651	CP(48)= 0.0682	CP(11)= 0.0652	CP(121)= 0.0573
CP(86)= 0.0680	CP(49)= 0.0413	CP(12)= 0.0838	CP(122)= 0.0290
CP(87)= 0.0710	CP(50)= 0.0067	CP(13)= 0.0822	CP(123)=-0.0091
CP(88)= 0.0440	CP(51)=-0.0447	CP(14)= 0.0588	CP(124)=-0.0471
CP(89)= 0.0185	CP(52)=-0.0577	CP(15)= 0.0338	CP(125)=-0.0626
CP(90)=-0.0319	CP(53)=-0.0632	CP(16)=-0.0046	CP(126)=-0.0665
CP(91)=-0.0468	CP(54)=-0.0713	CP(17)=-0.0429	CP(127)=-0.0747
CP(92)=-0.0616	CP(55)=-0.0744	CP(18)=-0.0601	CP(128)=-0.0687
CP(93)=-0.0697	CP(56)=-0.0811	CP(19)=-0.0651	CP(129)=-0.0729
CP(94)=-0.0712	CP(57)=-0.0654	CP(20)=-0.0773	CP(130)=-0.0669
CP(95)=-0.0709	CP(58)=-0.0619	CP(21)=-0.0708	CP(131)=-0.0624
CP(96)=-0.0676	CP(59)=-0.0607	CP(22)=-0.0703	CP(132)=-0.0713
CP(97)=-0.0620	CP(133)=-0.0885	CP(23)=-0.0642	CP(60)=-0.0893
CP(98)=-0.0684	CP(134)=-0.0827	CP(24)=-0.0651	CP(61)=-0.0947
CP(99)=-0.0816	CP(135)=-0.0690	CP(25)=-0.0657	CP(62)=-0.0808
CP(100)=-0.0959	CP(136)=-0.0521	CP(26)=-0.0732	CP(63)=-0.0479
CP(101)=-0.0847	CP(137)=-0.0540	CP(27)=-0.0939	CP(64)=-0.0459
CP(102)=-0.0703	CP(138)=-0.0456	CP(28)=-0.0897	CP(65)=-0.0425
CP(103)=-0.0562	CP(139)=-0.0569	CP(29)=-0.0798	CP(66)=-0.0538
CP(104)=-0.0566	CP(140)=-0.0473	CP(30)=-0.0438	CP(67)=-0.0465
CP(105)=-0.0429	CP(141)= 0.0080	CP(31)=-0.0502	CP(68)=-0.0251
CP(106)=-0.0126	CP(142)= 0.0381	CP(32)=-0.0553	CP(69)= 0.0092
CP(107)= 0.0178	CP(143)= 0.0230	CP(33)= 0.0071	CP(70)= 0.0381
CP(108)= 0.0198	CP(144)= 0.0080	CP(34)= 0.0381	CP(71)= 0.0096
CP(109)=-0.0156	CP(145)=-0.0039	CP(35)=-0.0036	CP(72)=-0.0066
CP(110)=-0.0076	CP(146)=-0.0071	CP(36)= 0.0265	CP(73)=-0.0080
		CP(37)= 0.0265	

CPB1=-0.1292 CPB2=-0.1278 CPB3=-0.1297 CPB4=-0.1289

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.599 PT=2555.240PSF P1=2004.725PSF Q= 503.686PSF RE= 3.992X 10**-6/FT

CP(75)= 0.2915	CP(38)= 0.4018	CP(1)= 0.2886	CP(111)= 0.3649
CP(76)= 0.1175	CP(39)= 0.2499	CP(2)= 0.1996	CP(112)= 0.1176
CP(77)= 0.0581	CP(40)= 0.0929	CP(3)= 0.1222	CP(113)= 0.0285
CP(78)= 0.0003	CP(41)= 0.0151	CP(4)= 0.0448	CP(114)= 0.0086
CP(79)= 0.0174	CP(42)= 0.0072	CP(5)= 0.0222	CP(115)=-0.0114
CP(80)=-0.0008	CP(43)=-0.0008	CP(6)= 0.0084	CP(116)= 0.0091
CP(81)= 0.0037	CP(44)= 0.0168	CP(7)= 0.0070	CP(117)= 0.0295
CP(82)= 0.0022	CP(45)= 0.0494	CP(8)= 0.0111	CP(118)= 0.0538
CP(83)= 0.0175	CP(46)= 0.0776	CP(9)= 0.0198	CP(119)= 0.0882
CP(84)= 0.0328	CP(47)= 0.0833	CP(10)= 0.0315	CP(120)= 0.0801
CP(85)= 0.0650	CP(48)= 0.0689	CP(11)= 0.0666	CP(121)= 0.0594
CP(86)= 0.0685	CP(49)= 0.0421	CP(12)= 0.0858	CP(122)= 0.0305
CP(87)= 0.0721	CP(50)= 0.0073	CP(13)= 0.0854	CP(123)=-0.0081
CP(88)= 0.0448	CP(51)=-0.0463	CP(14)= 0.0615	CP(124)=-0.0467
CP(89)= 0.0204	CP(52)=-0.0583	CP(15)= 0.0356	CP(125)=-0.0614
CP(90)=-0.0320	CP(53)=-0.0622	CP(16)=-0.0027	CP(126)=-0.0650
CP(91)=-0.0467	CP(54)=-0.0706	CP(17)=-0.0410	CP(127)=-0.0733
CP(92)=-0.0614	CP(55)=-0.0726	CP(18)=-0.0594	CP(128)=-0.0669
CP(93)=-0.0689	CP(56)=-0.0829	CP(19)=-0.0638	CP(129)=-0.0732
CP(94)=-0.0707	CP(57)=-0.0648	CP(20)=-0.0765	CP(130)=-0.0670
CP(95)=-0.0695	CP(58)=-0.0612	CP(21)=-0.0696	CP(131)=-0.0605
CP(96)=-0.0656	CP(59)=-0.0592	CP(22)=-0.0681	CP(132)=-0.0693
CP(97)=-0.0615	CP(133)=-0.0882	CP(23)=-0.0625	CP(60)=-0.0893
CP(98)=-0.0696	CP(134)=-0.0822	CP(24)=-0.0638	CP(61)=-0.0940
CP(99)=-0.0829	CP(135)=-0.0678	CP(25)=-0.0647	CP(62)=-0.0798
CP(100)=-0.0943	CP(136)=-0.0498	CP(26)=-0.0728	CP(63)=-0.0466
CP(101)=-0.0847	CP(137)=-0.0548	CP(27)=-0.0933	CP(64)=-0.0448
CP(102)=-0.0685	CP(138)=-0.0443	CP(28)=-0.0926	CP(65)=-0.0415
CP(103)=-0.0544	CP(139)=-0.0557	CP(29)=-0.0831	CP(66)=-0.0539
CP(104)=-0.0573	CP(140)=-0.0461	CP(30)=-0.0425	CP(67)=-0.0452
CP(105)=-0.0421	CP(141)= 0.0092	CP(31)=-0.0497	CP(68)=-0.0238
CP(106)=-0.0115	CP(142)= 0.0396	CP(32)=-0.0555	CP(69)= 0.0111
CP(107)= 0.0191	CP(143)= 0.0243	CP(33)= 0.0075	CP(70)= 0.0396
CP(108)= 0.0213	CP(144)= 0.0089	CP(34)= 0.0396	CP(71)= 0.0105
CP(109)=-0.0157	CP(145)=-0.0028	CP(35)=-0.0037	CP(72)=-0.0056
CP(110)=-0.0066	CP(146)=-0.0060	CP(36)= 0.0334	CP(73)=-0.0073
		CP(37)= 0.0335	

CPB1=-0.1308 CPB2=-0.1294 CPB3=-0.1310 CPB4=-0.1297

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.800 PT=3487.37PSF P1=2655.228PSF Q= 649.642PSF RE= 5.313X 10**-6/FT

CP(75)= 0.2508	CP(38)= 0.3960	CP(1)= 0.2920	CP(111)= 0.3609
CP(76)= 0.1105	CP(39)= 0.2461	CP(2)= 0.1999	CP(112)= 0.1134
CP(77)= 0.0488	CP(40)= 0.0320	CP(3)= 0.1220	CP(113)= 0.0290
CP(78)=-0.0041	CP(41)= 0.0110	CP(4)= 0.0441	CP(114)= 0.0081
CP(79)= 0.0163	CP(42)= 0.0034	CP(5)= 0.0231	CP(115)=-0.0128
CP(80)=-0.0128	CP(43)=-0.0032	CP(6)= 0.0094	CP(116)= 0.0080
CP(81)= 0.0017	CP(44)= 0.0208	CP(7)= 0.0078	CP(117)= 0.0289
CP(82)=-0.0000	CP(45)= 0.0481	CP(8)= 0.0120	CP(118)= 0.0534
CP(83)= 0.0155	CP(46)= 0.0758	CP(9)= 0.0204	CP(119)= 0.0883
CP(84)= 0.0311	CP(47)= 0.0817	CP(10)= 0.0316	CP(120)= 0.0798
CP(85)= 0.0634	CP(48)= 0.0674	CP(11)= 0.0670	CP(121)= 0.0594
CP(86)= 0.0674	CP(49)= 0.0406	CP(12)= 0.0862	CP(122)= 0.0301
CP(87)= 0.0708	CP(50)= 0.0053	CP(13)= 0.0859	CP(123)=-0.0088
CP(88)= 0.0642	CP(51)=-0.0497	CP(14)= 0.0623	CP(124)=-0.0476
CP(89)= 0.0154	CP(52)=-0.0809	CP(15)= 0.0360	CP(125)=-0.0621
CP(90)=-0.0340	CP(53)=-0.0849	CP(16)=-0.0023	CP(126)=-0.0655
CP(91)=-0.0481	CP(54)=-0.0724	CP(17)=-0.0406	CP(127)=-0.0745
CP(92)=-0.0521	CP(55)=-0.0734	CP(18)=-0.0597	CP(128)=-0.0674
CP(93)=-0.0549	CP(56)=-0.0855	CP(19)=-0.0626	CP(129)=-0.0743
CP(94)=-0.0710	CP(57)=-0.0960	CP(20)=-0.0763	CP(130)=-0.0682
CP(95)=-0.0602	CP(58)=-0.0624	CP(21)=-0.0691	CP(131)=-0.0602
CP(96)=-0.0651	CP(59)=-0.0599	CP(22)=-0.0678	CP(132)=-0.0695
CP(97)=-0.0607	CP(133)=-0.0887	CP(23)=-0.0617	CP(60)=-0.0908
CP(98)=-0.0567	CP(134)=-0.0827	CP(24)=-0.0633	CP(61)=-0.0955
CP(99)=-0.0548	CP(135)=-0.0677	CP(25)=-0.0646	CP(62)=-0.0809
CP(100)=-0.0567	CP(136)=-0.0496	CP(26)=-0.0727	CP(63)=-0.0472
CP(101)=-0.0584	CP(137)=-0.0554	CP(27)=-0.0934	CP(64)=-0.0454
CP(102)=-0.0675	CP(138)=-0.0440	CP(28)=-0.0949	CP(65)=-0.0425
CP(103)=-0.0532	CP(139)=-0.0455	CP(29)=-0.0860	CP(66)=-0.0559
CP(104)=-0.0579	CP(140)=-0.0459	CP(30)=-0.0428	CP(67)=-0.0459
CP(105)=-0.0418	CP(141)= 0.0099	CP(31)=-0.0495	CP(68)=-0.0244
CP(106)=-0.0111	CP(142)= 0.0391	CP(32)=-0.0566	CP(69)= 0.0102
CP(107)= 0.0194	CP(143)= 0.0237	CP(33)= 0.0071	CP(70)= 0.0391
CP(108)= 0.0217	CP(144)= 0.0086	CP(34)= 0.0401	CP(71)= 0.0097
CP(109)=-0.0158	CP(145)=-0.0029	CP(35)=-0.0044	CP(72)=-0.0067
CP(110)=-0.0070	CP(146)=-0.0046	CP(36)= 0.0373	CP(73)=-0.0077
		CP(37)= 0.0371	

CPH1=-0.1340 CPH2=-0.1426 CPH3=-0.1339 CPH4=-0.1338

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.894 PT= 750.743PSF P1= 445.949PSF Q= 250.462PSF RE= 1.471X 10**-6/FT

CP(75)= 0.3736	CP(38)= 0.4852	CP(1)= 0.3599	CP(111)= 0.4627
CP(76)= 0.2115	CP(39)= 0.3046	CP(2)= 0.2497	CP(112)= 0.1772
CP(77)= 0.1125	CP(40)= 0.1120	CP(3)= 0.1563	CP(113)= 0.0419
CP(78)= 0.0382	CP(41)= 0.0152	CP(4)= 0.0628	CP(114)= 0.0173
CP(79)= 0.0229	CP(42)= 0.0083	CP(5)= 0.0218	CP(115)=-0.0072
CP(80)= 0.0008	CP(43)= 0.0014	CP(6)= 0.0031	CP(116)= 0.0148
CP(81)= 0.0077	CP(44)= 0.0092	CP(7)= 0.0046	CP(117)= 0.0367
CP(82)= 0.0086	CP(45)= 0.0732	CP(8)= 0.0117	CP(118)= 0.0715
CP(83)= 0.0314	CP(46)= 0.1145	CP(9)= 0.0278	CP(119)= 0.1175
CP(84)= 0.0543	CP(47)= 0.1211	CP(10)= 0.0494	CP(120)= 0.1129
CP(85)= 0.0969	CP(48)= 0.1031	CP(11)= 0.0942	CP(121)= 0.0900
CP(86)= 0.1012	CP(49)= 0.0718	CP(12)= 0.1167	CP(122)= 0.0503
CP(87)= 0.1054	CP(50)= 0.0272	CP(13)= 0.1147	CP(123)=-0.0005
CP(88)= 0.0721	CP(51)=-0.0428	CP(14)= 0.0855	CP(124)=-0.0512
CP(89)= 0.0379	CP(52)=-0.0663	CP(15)= 0.0540	CP(125)=-0.0751
CP(90)=-0.0324	CP(53)=-0.0793	CP(16)=-0.0006	CP(126)=-0.0837
CP(91)=-0.0557	CP(54)=-0.0936	CP(17)=-0.0552	CP(127)=-0.0952
CP(92)=-0.0791	CP(55)=-0.0932	CP(18)=-0.0785	CP(128)=-0.0874
CP(93)=-0.0901	CP(56)=-0.0966	CP(19)=-0.0866	CP(129)=-0.0875
CP(94)=-0.0906	CP(57)=-0.0789	CP(20)=-0.1016	CP(130)=-0.0768
CP(95)=-0.0884	CP(58)=-0.0717	CP(21)=-0.0898	CP(131)=-0.0743
CP(96)=-0.0820	CP(59)=-0.0727	CP(22)=-0.0877	CP(132)=-0.0843
CP(97)=-0.0742	CP(133)=-0.1161	CP(23)=-0.0784	CP(60)=-0.1184
CP(98)=-0.0783	CP(134)=-0.1076	CP(24)=-0.0791	CP(61)=-0.1271
CP(99)=-0.0935	CP(135)=-0.0835	CP(25)=-0.0785	CP(62)=-0.1061
CP(100)=-0.1291	CP(136)=-0.0621	CP(26)=-0.0888	CP(63)=-0.0578
CP(101)=-0.1037	CP(137)=-0.0568	CP(27)=-0.1251	CP(64)=-0.0552
CP(102)=-0.0871	CP(138)=-0.0497	CP(28)=-0.1075	CP(65)=-0.0492
CP(103)=-0.0633	CP(139)=-0.0679	CP(29)=-0.0879	CP(66)=-0.0661
CP(104)=-0.0604	CP(140)=-0.0572	CP(30)=-0.0465	CP(67)=-0.0560
CP(105)=-0.0451	CP(141)= 0.0235	CP(31)=-0.0552	CP(68)=-0.0225
CP(106)=-0.0026	CP(142)= 0.0614	CP(32)=-0.0628	CP(69)= 0.0232
CP(107)= 0.0399	CP(143)= 0.0449	CP(33)= 0.0252	CP(70)= 0.0614
CP(108)= 0.0445	CP(144)= 0.0284	CP(34)= 0.0637	CP(71)= 0.0296
CP(109)=-0.0050	CP(145)= 0.0068	CP(35)= 0.0126	CP(72)= 0.0063
CP(110)= 0.0086	CP(146)= 0.0068	CP(36)= 0.0181	CP(73)= 0.0020
		CP(37)= 0.0181	

CPB1=-0.1253 CPB2=-0.1254 CPB3=-0.1262 CPB4=-0.1246

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.900 PT=1275.540PSF P1= 754.444PSF Q= 427.451PSF RE= 2.512X 10**-6/FT

CP(75)= 0.3702	CP(33)= 0.4850	CP(1)= 0.3613	CP(111)= 0.4672
CP(76)= 0.1798	CP(34)= 0.3035	CP(2)= 0.2528	CP(112)= 0.1724
CP(77)= 0.1037	CP(40)= 0.1089	CP(3)= 0.1579	CP(113)= 0.0421
CP(78)= 0.0336	CP(41)= 0.0112	CP(4)= 0.0630	CP(114)= 0.0156
CP(79)= 0.0260	CP(42)= 0.0067	CP(5)= 0.0251	CP(115)=-0.0109
CP(80)= 0.0004	CP(43)= 0.0063	CP(6)= 0.0040	CP(116)= 0.0138
CP(81)= 0.0061	CP(44)= 0.0105	CP(7)= 0.0039	CP(117)= 0.0384
CP(82)= 0.0041	CP(45)= 0.0724	CP(8)= 0.0080	CP(118)= 0.0736
CP(83)= 0.0269	CP(46)= 0.1114	CP(9)= 0.0231	CP(119)= 0.1223
CP(84)= 0.0497	CP(47)= 0.1204	CP(10)= 0.0450	CP(120)= 0.1159
CP(85)= 0.0971	CP(48)= 0.1034	CP(11)= 0.0947	CP(121)= 0.0899
CP(86)= 0.1045	CP(49)= 0.0706	CP(12)= 0.1205	CP(122)= 0.0534
CP(87)= 0.1119	CP(50)= 0.0248	CP(13)= 0.1216	CP(123)=-0.0014
CP(88)= 0.0792	CP(51)=-0.0492	CP(14)= 0.0934	CP(124)=-0.0562
CP(89)= 0.0452	CP(52)=-0.0723	CP(15)= 0.0622	CP(125)=-0.0793
CP(90)=-0.0296	CP(53)=-0.0827	CP(16)= 0.0050	CP(126)=-0.0853
CP(91)=-0.0541	CP(54)=-0.0958	CP(17)=-0.0521	CP(127)=-0.0971
CP(92)=-0.0786	CP(55)=-0.0936	CP(18)=-0.0783	CP(128)=-0.0871
CP(93)=-0.0912	CP(56)=-0.0942	CP(19)=-0.0865	CP(129)=-0.0883
CP(94)=-0.0927	CP(57)=-0.0745	CP(20)=-0.1052	CP(130)=-0.0769
CP(95)=-0.0898	CP(58)=-0.0711	CP(21)=-0.0918	CP(131)=-0.0738
CP(96)=-0.0823	CP(59)=-0.0715	CP(22)=-0.0893	CP(132)=-0.0840
CP(97)=-0.0718	CP(133)=-0.1178	CP(23)=-0.0762	CP(60)=-0.1210
CP(98)=-0.0783	CP(134)=-0.1040	CP(24)=-0.0774	CP(61)=-0.1309
CP(99)=-0.0940	CP(135)=-0.0834	CP(25)=-0.0774	CP(62)=-0.1080
CP(100)=-0.1355	CP(136)=-0.0592	CP(26)=-0.0910	CP(63)=-0.0561
CP(101)=-0.1127	CP(137)=-0.0580	CP(27)=-0.1330	CP(64)=-0.0510
CP(102)=-0.0849	CP(138)=-0.0476	CP(28)=-0.1167	CP(65)=-0.0466
CP(103)=-0.0631	CP(139)=-0.0680	CP(29)=-0.0937	CP(66)=-0.0661
CP(104)=-0.0634	CP(140)=-0.0570	CP(30)=-0.0462	CP(67)=-0.0570
CP(105)=-0.0486	CP(141)= 0.0262	CP(31)=-0.0572	CP(68)=-0.0217
CP(106)=-0.0035	CP(142)= 0.0638	CP(32)=-0.0686	CP(69)= 0.0270
CP(107)= 0.0415	CP(143)= 0.0456	CP(33)= 0.0250	CP(70)= 0.0638
CP(108)= 0.0451	CP(144)= 0.0274	CP(34)= 0.0674	CP(71)= 0.0290
CP(109)=-0.0064	CP(145)= 0.0073	CP(35)= 0.0120	CP(72)= 0.0051
CP(110)= 0.0080	CP(146)= 0.0054	CP(36)= 0.0189	CP(73)= 0.0013
		CP(37)= 0.0186	

CPB1=-0.1286 CPB2=-0.1271 CPB3=-0.1293 CPB4=-0.1268

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.897 PT=2073.390PSF P1=1208.497PSF Q= 681.407PSF RE= 3.983X 10**-6/FT

CP(75)= 0.4679	CP(38)= 0.4434	CP(1)= 0.3601	CP(111)= 0.4437
CP(76)= 0.1742	CP(39)= 0.3158	CP(2)= 0.2524	CP(112)= 0.1627
CP(77)= 0.0430	CP(40)= 0.1248	CP(3)= 0.1562	CP(113)= 0.0397
CP(78)= 0.0224	CP(41)= 0.0197	CP(4)= 0.0599	CP(114)= 0.0119
CP(79)= 0.0268	CP(42)= 0.0049	CP(5)= 0.0258	CP(115)=-0.0159
CP(80)=-0.0008	CP(43)= 0.0001	CP(6)= 0.0045	CP(116)= 0.0110
CP(81)= 0.0049	CP(44)= 0.0145	CP(7)= 0.0041	CP(117)= 0.0379
CP(82)= 0.0025	CP(45)= 0.0706	CP(8)= 0.0076	CP(118)= 0.0740
CP(83)= 0.0249	CP(46)= 0.1103	CP(9)= 0.0223	CP(119)= 0.1239
CP(84)= 0.0473	CP(47)= 0.1205	CP(10)= 0.0433	CP(120)= 0.1165
CP(85)= 0.0449	CP(48)= 0.1027	CP(11)= 0.0930	CP(121)= 0.0901
CP(86)= 0.1028	CP(49)= 0.0668	CP(12)= 0.1191	CP(122)= 0.0536
CP(87)= 0.1107	CP(50)= 0.0231	CP(13)= 0.1208	CP(123)=-0.0033
CP(88)= 0.0777	CP(51)=-0.0534	CP(14)= 0.0924	CP(124)=-0.0603
CP(89)= 0.0440	CP(52)=-0.0765	CP(15)= 0.0607	CP(125)=-0.0824
CP(90)=-0.0317	CP(53)=-0.0847	CP(16)= 0.0039	CP(126)=-0.0882
CP(91)=-0.0555	CP(54)=-0.0986	CP(17)=-0.0529	CP(127)=-0.1008
CP(92)=-0.0792	CP(55)=-0.0959	CP(18)=-0.0808	CP(128)=-0.0895
CP(93)=-0.0913	CP(56)=-0.1036	CP(19)=-0.0868	CP(129)=-0.0929
CP(94)=-0.0921	CP(57)=-0.0800	CP(20)=-0.1058	CP(130)=-0.0810
CP(95)=-0.0890	CP(58)=-0.0724	CP(21)=-0.0923	CP(131)=-0.0753
CP(96)=-0.0810	CP(59)=-0.0724	CP(22)=-0.0895	CP(132)=-0.0857
CP(97)=-0.0717	CP(133)=-0.1212	CP(23)=-0.0767	CP(60)=-0.1247
CP(98)=-0.0707	CP(134)=-0.1124	CP(24)=-0.0783	CP(61)=-0.1353
CP(99)=-0.1001	CP(135)=-0.0847	CP(25)=-0.0783	CP(62)=-0.1106
CP(100)=-0.1353	CP(136)=-0.0595	CP(26)=-0.0913	CP(63)=-0.0570
CP(101)=-0.1136	CP(137)=-0.0604	CP(27)=-0.1339	CP(64)=-0.0517
CP(102)=-0.0840	CP(138)=-0.0493	CP(28)=-0.1200	CP(65)=-0.0473
CP(103)=-0.0821	CP(139)=-0.0705	CP(29)=-0.0981	CP(66)=-0.0684
CP(104)=-0.0852	CP(140)=-0.0590	CP(30)=-0.0466	CP(67)=-0.0587
CP(105)=-0.0493	CP(141)= 0.0282	CP(31)=-0.0583	CP(68)=-0.0227
CP(106)=-0.0039	CP(142)= 0.0654	CP(32)=-0.0704	CP(69)= 0.0278
CP(107)= 0.0415	CP(143)= 0.0436	CP(33)= 0.0241	CP(70)= 0.0654
CP(108)= 0.0452	CP(144)= 0.0257	CP(34)= 0.0677	CP(71)= 0.0282
CP(109)=-0.0079	CP(145)= 0.0061	CP(35)= 0.0103	CP(72)= 0.0033
CP(110)= 0.0077	CP(146)= 0.0041	CP(36)= 0.0215	CP(73)=-0.0002
		CP(37)= 0.0215	

CPB1=-0.1306 CPB2=-0.1304 CPB3=-0.1308 CPB4=-0.1314

CYLINDRICAL AFTBODY CONFIGURATION

MACH=0.699 PT=2708.450PSF P1=1601.336PSF Q= 906.933PSF RE= 5.313X 10**-6/FT

CP(75)= 0.3650	CP(34)= 0.4844	CP(1)= 0.3637	CP(111)= 0.4400
CP(76)= 0.1703	CP(39)= 0.3157	CP(2)= 0.2520	CP(112)= 0.1578
CP(77)= 0.0890	CP(40)= 0.1262	CP(3)= 0.1546	CP(113)= 0.0381
CP(78)= 0.0166	CP(41)= 0.0147	CP(4)= 0.0573	CP(114)= 0.0100
CP(79)= 0.0266	CP(42)= 0.0078	CP(5)= 0.0254	CP(115)=-0.0182
CP(80)=-0.0010	CP(43)=-0.0012	CP(6)= 0.0040	CP(116)= 0.0101
CP(81)= 0.0047	CP(44)= 0.0178	CP(7)= 0.0036	CP(117)= 0.0383
CP(82)= 0.0072	CP(45)= 0.0715	CP(8)= 0.0074	CP(118)= 0.0747
CP(83)= 0.0249	CP(46)= 0.1122	CP(9)= 0.0224	CP(119)= 0.1256
CP(84)= 0.0476	CP(47)= 0.1223	CP(10)= 0.0429	CP(120)= 0.1179
CP(85)= 0.0957	CP(48)= 0.1052	CP(11)= 0.0937	CP(121)= 0.0916
CP(86)= 0.1037	CP(49)= 0.0722	CP(12)= 0.1202	CP(122)= 0.0548
CP(87)= 0.1118	CP(50)= 0.0250	CP(13)= 0.1221	CP(123)=-0.0031
CP(88)= 0.0743	CP(51)=-0.0546	CP(14)= 0.0933	CP(124)=-0.0610
CP(89)= 0.0449	CP(52)=-0.0768	CP(15)= 0.0611	CP(125)=-0.0831
CP(90)=-0.0317	CP(53)=-0.0839	CP(16)= 0.0042	CP(126)=-0.0883
CP(91)=-0.0554	CP(54)=-0.0977	CP(17)=-0.0528	CP(127)=-0.1014
CP(92)=-0.0791	CP(55)=-0.0946	CP(18)=-0.0812	CP(128)=-0.0897
CP(93)=-0.0912	CP(56)=-0.1052	CP(19)=-0.0863	CP(129)=-0.0933
CP(94)=-0.0926	CP(57)=-0.0797	CP(20)=-0.1060	CP(130)=-0.0810
CP(95)=-0.0893	CP(58)=-0.0721	CP(21)=-0.0920	CP(131)=-0.0745
CP(96)=-0.0815	CP(59)=-0.0708	CP(22)=-0.0888	CP(132)=-0.0853
CP(97)=-0.0711	CP(133)=-0.1216	CP(23)=-0.0759	CP(60)=-0.1260
CP(98)=-0.0804	CP(134)=-0.1125	CP(24)=-0.0777	CP(61)=-0.1369
CP(99)=-0.1024	CP(135)=-0.0842	CP(25)=-0.0776	CP(62)=-0.1109
CP(100)=-0.1370	CP(136)=-0.0581	CP(26)=-0.0908	CP(63)=-0.0557
CP(101)=-0.1140	CP(137)=-0.0601	CP(27)=-0.1343	CP(64)=-0.0503
CP(102)=-0.0836	CP(138)=-0.0475	CP(28)=-0.1218	CP(65)=-0.0464
CP(103)=-0.0616	CP(139)=-0.0695	CP(29)=-0.1001	CP(66)=-0.0688
CP(104)=-0.0662	CP(140)=-0.0581	CP(30)=-0.0455	CP(67)=-0.0578
CP(105)=-0.0492	CP(141)= 0.0287	CP(31)=-0.0577	CP(68)=-0.0215
CP(106)=-0.0031	CP(142)= 0.0679	CP(32)=-0.0703	CP(69)= 0.0297
CP(107)= 0.0431	CP(143)= 0.0476	CP(33)= 0.0257	CP(70)= 0.0679
CP(108)= 0.0464	CP(144)= 0.0274	CP(34)= 0.0696	CP(71)= 0.0290
CP(109)=-0.0070	CP(145)= 0.0077	CP(35)= 0.0105	CP(72)= 0.0044
CP(110)= 0.0081	CP(146)= 0.0053	CP(36)= 0.0231	CP(73)= 0.0009
		CP(37)= 0.0230	

CPB1=-0.1304 CPB2=-0.1312 CPB3=-0.1308 CPB4=-0.1316

CYLINDRICAL AFTBODY CONFIGURATION

MACH=1.196 PT= 705.011PSF P1= 292.357PSF Q= 292.597PSF RE= 1.470X 10**-6/FT

CP(75)= 0.4578	CP(38)= 0.5430	CP(1)= 0.4462	CP(111)= 0.5170
CP(76)= 0.3243	CP(39)= 0.4142	CP(2)= 0.3600	CP(112)= 0.2927
CP(77)= 0.2513	CP(40)= 0.2329	CP(3)= 0.2606	CP(113)= 0.1552
CP(78)= 0.1416	CP(41)= 0.0979	CP(4)= 0.1611	CP(114)= 0.1086
CP(79)= 0.1032	CP(42)= 0.0663	CP(5)= 0.1053	CP(115)= 0.0621
CP(80)= 0.0681	CP(43)= 0.0348	CP(6)= 0.0716	CP(116)= 0.0376
CP(81)= 0.0247	CP(44)= 0.0318	CP(7)= 0.0441	CP(117)= 0.0132
CP(82)= 0.0176	CP(45)= 0.0139	CP(8)= 0.0311	CP(118)= 0.0070
CP(83)= 0.0295	CP(46)= 0.0503	CP(9)= 0.0277	CP(119)= 0.0916
CP(84)= 0.0414	CP(47)= 0.1252	CP(10)= 0.0343	CP(120)= 0.1339
CP(85)= 0.0641	CP(48)= 0.1769	CP(11)= 0.0537	CP(121)= 0.1612
CP(86)= 0.1171	CP(49)= 0.1707	CP(12)= 0.0929	CP(122)= 0.1622
CP(87)= 0.1701	CP(50)= 0.1685	CP(13)= 0.1455	CP(123)= 0.1288
CP(88)= 0.1680	CP(51)= 0.1073	CP(14)= 0.1547	CP(124)= 0.0954
CP(89)= 0.1554	CP(52)= 0.0662	CP(15)= 0.1488	CP(125)= 0.0579
CP(90)= 0.1064	CP(53)= 0.0323	CP(16)= 0.1129	CP(126)= 0.0349
CP(91)= 0.0655	CP(54)= 0.0114	CP(17)= 0.0771	CP(127)=-0.0060
CP(92)= 0.0225	CP(55)=-0.0183	CP(18)= 0.0341	CP(128)=-0.0082
CP(93)= 0.0050	CP(56)=-0.0341	CP(19)= 0.0119	CP(129)=-0.0265
CP(94)=-0.0186	CP(57)=-0.0309	CP(20)=-0.0134	CP(130)=-0.0301
CP(95)=-0.0334	CP(58)=-0.0319	CP(21)=-0.0247	CP(131)=-0.0410
CP(96)=-0.0341	CP(59)=-0.0469	CP(22)=-0.0405	CP(132)=-0.0368
CP(97)=-0.0365	CP(133)=-0.0395	CP(23)=-0.0360	CP(60)=-0.0451
CP(98)=-0.0459	CP(134)=-0.0819	CP(24)=-0.0405	CP(61)=-0.0754
CP(99)=-0.0526	CP(135)=-0.0804	CP(25)=-0.0478	CP(62)=-0.0803
CP(100)=-0.0786	CP(136)=-0.0754	CP(26)=-0.0444	CP(63)=-0.0677
CP(101)=-0.0903	CP(137)=-0.0832	CP(27)=-0.0796	CP(64)=-0.0762
CP(102)=-0.0855	CP(138)=-0.0567	CP(28)=-0.0853	CP(65)=-0.0552
CP(103)=-0.0787	CP(139)=-0.0730	CP(29)=-0.0889	CP(66)=-0.0680
CP(104)=-0.0641	CP(140)=-0.0781	CP(30)=-0.0638	CP(67)=-0.0776
CP(105)=-0.0982	CP(141)=-0.0746	CP(31)=-0.0673	CP(68)=-0.1089
CP(106)=-0.0676	CP(142)=-0.0171	CP(32)=-0.0814	CP(69)=-0.0794
CP(107)=-0.0370	CP(143)= 0.0008	CP(33)=-0.0571	CP(70)=-0.0171
CP(108)= 0.0223	CP(144)= 0.0186	CP(34)= 0.0065	CP(71)= 0.0220
CP(109)=-0.0051	CP(145)= 0.0055	CP(35)= 0.0100	CP(72)=-0.0013
CP(110)=-0.0448	CP(146)=-0.0191	CP(36)= 0.0124	CP(73)=-0.0136
		CP(37)= 0.0127	

CPB1=-0.2104 CPB2=-0.2103 CPB3=-0.2112 CPB4=-0.2104

CYLINDRICAL AFTBODY CONFIGURATION

MACH=1.197 PT=1199.050PSF P1= 496.344PSF Q= 497.886PSF RE= 2.502X 10**-6/FT

CP(75)= 0.4508	CP(38)= 0.5402	CP(1)= 0.4419	CP(111)= 0.5075
CP(76)= 0.3158	CP(39)= 0.4065	CP(2)= 0.3649	CP(112)= 0.2840
CP(77)= 0.2198	CP(40)= 0.2352	CP(3)= 0.2733	CP(113)= 0.1559
CP(78)= 0.1523	CP(41)= 0.0992	CP(4)= 0.1816	CP(114)= 0.1057
CP(79)= 0.1208	CP(42)= 0.0644	CP(5)= 0.1301	CP(115)= 0.0556
CP(80)= 0.0768	CP(43)= 0.0296	CP(6)= 0.0869	CP(116)= 0.0340
CP(81)= 0.0481	CP(44)= 0.0310	CP(7)= 0.0492	CP(117)= 0.0124
CP(82)= 0.0183	CP(45)= 0.0107	CP(8)= 0.0391	CP(118)= 0.0058
CP(83)= 0.0202	CP(46)= 0.0508	CP(9)= 0.0261	CP(119)= 0.0919
CP(84)= 0.0221	CP(47)= 0.1389	CP(10)= 0.0115	CP(120)= 0.1416
CP(85)= 0.0374	CP(48)= 0.1748	CP(11)= 0.0225	CP(121)= 0.1610
CP(86)= 0.1029	CP(49)= 0.1729	CP(12)= 0.0716	CP(122)= 0.1726
CP(87)= 0.1684	CP(50)= 0.1642	CP(13)= 0.1359	CP(123)= 0.1306
CP(88)= 0.1750	CP(51)= 0.1014	CP(14)= 0.1625	CP(124)= 0.0887
CP(89)= 0.1825	CP(52)= 0.0601	CP(15)= 0.1687	CP(125)= 0.0426
CP(90)= 0.1244	CP(53)= 0.0306	CP(16)= 0.1317	CP(126)= 0.0218
CP(91)= 0.0790	CP(54)= 0.0089	CP(17)= 0.0947	CP(127)=-0.0094
CP(92)= 0.0337	CP(55)=-0.0230	CP(18)= 0.0516	CP(128)=-0.0124
CP(93)= 0.0126	CP(56)=-0.0454	CP(19)= 0.0272	CP(129)=-0.0317
CP(94)=-0.0091	CP(57)=-0.0304	CP(20)=-0.0055	CP(130)=-0.0372
CP(95)=-0.0320	CP(58)=-0.0266	CP(21)=-0.0211	CP(131)=-0.0401
CP(96)=-0.0332	CP(59)=-0.0484	CP(22)=-0.0367	CP(132)=-0.0358
CP(97)=-0.0354	CP(133)=-0.0367	CP(23)=-0.0332	CP(60)=-0.0468
CP(98)=-0.0387	CP(134)=-0.0832	CP(24)=-0.0304	CP(61)=-0.0794
CP(99)=-0.0460	CP(135)=-0.0873	CP(25)=-0.0324	CP(62)=-0.0855
CP(100)=-0.0827	CP(136)=-0.0775	CP(26)=-0.0334	CP(63)=-0.0708
CP(101)=-0.0927	CP(137)=-0.0753	CP(27)=-0.0894	CP(64)=-0.0716
CP(102)=-0.0934	CP(138)=-0.0652	CP(28)=-0.0981	CP(65)=-0.0505
CP(103)=-0.0749	CP(139)=-0.0712	CP(29)=-0.0947	CP(66)=-0.0705
CP(104)=-0.0610	CP(140)=-0.0420	CP(30)=-0.0618	CP(67)=-0.0766
CP(105)=-0.1045	CP(141)=-0.0765	CP(31)=-0.0548	CP(68)=-0.1138
CP(106)=-0.0754	CP(142)=-0.0186	CP(32)=-0.0801	CP(69)=-0.0815
CP(107)=-0.0463	CP(143)=-0.0013	CP(33)=-0.0719	CP(70)=-0.0186
CP(108)= 0.0223	CP(144)= 0.0160	CP(34)= 0.0043	CP(71)= 0.0202
CP(109)=-0.0043	CP(145)= 0.0046	CP(35)= 0.0068	CP(72)= 0.0053
CP(110)=-0.0552	CP(146)=-0.0247	CP(36)= 0.0139	CP(73)=-0.0175
		CP(37)= 0.0139	

CPM1=-0.2185 CPM2=-0.2198 CPM3=-0.2184 CPM4=-0.2198

CYLINDRICAL AFTBODY CONFIGURATION

MACH=1.199 PT=1909.600PSF P1= 788.357PSF Q= 793.528PSF RE= 3.983X 10**-6/FT

CP(75)= 0.4473	CP(38)= 0.5459	CP(1)= 0.4494	CP(111)= 0.5042
CP(76)= 0.2853	CP(39)= 0.4227	CP(2)= 0.3644	CP(112)= 0.2736
CP(77)= 0.2112	CP(40)= 0.2467	CP(3)= 0.2736	CP(113)= 0.1552
CP(78)= 0.1440	CP(41)= 0.1157	CP(4)= 0.1827	CP(114)= 0.1049
CP(79)= 0.1271	CP(42)= 0.0693	CP(5)= 0.1335	CP(115)= 0.0546
CP(80)= 0.0864	CP(43)= 0.0229	CP(6)= 0.0921	CP(116)= 0.0371
CP(81)= 0.0392	CP(44)= 0.0303	CP(7)= 0.0519	CP(117)= 0.0196
CP(82)= 0.0209	CP(45)= 0.0116	CP(8)= 0.0437	CP(118)= 0.0090
CP(83)= 0.0243	CP(46)= 0.0486	CP(9)= 0.0304	CP(119)= 0.0907
CP(84)= 0.0277	CP(47)= 0.1446	CP(10)= 0.0132	CP(120)= 0.1478
CP(85)= 0.0414	CP(48)= 0.1756	CP(11)= 0.0305	CP(121)= 0.1669
CP(86)= 0.1038	CP(49)= 0.1750	CP(12)= 0.0683	CP(122)= 0.1651
CP(87)= 0.1662	CP(50)= 0.1683	CP(13)= 0.1347	CP(123)= 0.1265
CP(88)= 0.1730	CP(51)= 0.1014	CP(14)= 0.1675	CP(124)= 0.0878
CP(89)= 0.1826	CP(52)= 0.0582	CP(15)= 0.1702	CP(125)= 0.0406
CP(90)= 0.1300	CP(53)= 0.0258	CP(16)= 0.1328	CP(126)= 0.0197
CP(91)= 0.0856	CP(54)= 0.0076	CP(17)= 0.0955	CP(127)=-0.0096
CP(92)= 0.0412	CP(55)=-0.0190	CP(18)= 0.0459	CP(128)=-0.0123
CP(93)= 0.0160	CP(56)=-0.0454	CP(19)= 0.0333	CP(129)=-0.0315
CP(94)=-0.0095	CP(57)=-0.0293	CP(20)=-0.0026	CP(130)=-0.0372
CP(95)=-0.0246	CP(58)=-0.0210	CP(21)=-0.0234	CP(131)=-0.0354
CP(96)=-0.0347	CP(59)=-0.0443	CP(22)=-0.0342	CP(132)=-0.0340
CP(97)=-0.0257	CP(133)=-0.0312	CP(23)=-0.0296	CP(60)=-0.0421
CP(98)=-0.0404	CP(134)=-0.0808	CP(24)=-0.0294	CP(61)=-0.0805
CP(99)=-0.0465	CP(135)=-0.0853	CP(25)=-0.0256	CP(62)=-0.0845
CP(100)=-0.0814	CP(136)=-0.0774	CP(26)=-0.0296	CP(63)=-0.0729
CP(101)=-0.0916	CP(137)=-0.0738	CP(27)=-0.0867	CP(64)=-0.0700
CP(102)=-0.0920	CP(138)=-0.0659	CP(28)=-0.1002	CP(65)=-0.0561
CP(103)=-0.0760	CP(139)=-0.0674	CP(29)=-0.0977	CP(66)=-0.0683
CP(104)=-0.0578	CP(140)=-0.0835	CP(30)=-0.0578	CP(67)=-0.0718
CP(105)=-0.1036	CP(141)=-0.0788	CP(31)=-0.0537	CP(68)=-0.1101
CP(106)=-0.0747	CP(142)=-0.0176	CP(32)=-0.0787	CP(69)=-0.0812
CP(107)=-0.0459	CP(143)= 0.0008	CP(33)=-0.0740	CP(70)=-0.0176
CP(108)= 0.0278	CP(144)= 0.0191	CP(34)= 0.0118	CP(71)= 0.0197
CP(109)=-0.0047	CP(145)= 0.0065	CP(35)= 0.0056	CP(72)= 0.0135
CP(110)=-0.0509	CP(146)=-0.0230	CP(36)= 0.0152	CP(73)=-0.0090
		CP(37)= 0.0154	

CP81=-0.2199 CP82=-0.2207 CP83=-0.2205 CP84=-0.2210

CYLINDRICAL AFTBODY CONFIGURATION

MACH=1.199 PT=2253.220PSF P1= 929.983PSF Q= 936.384PSF RE= 4.711X 10**-6/FT

CP(75)= 0.4469	CP(38)= 0.5463	CP(1)= 0.4499	CP(111)= 0.5027
CP(76)= 0.2843	CP(39)= 0.4242	CP(2)= 0.3638	CP(112)= 0.2681
CP(77)= 0.2073	CP(40)= 0.2460	CP(3)= 0.2724	CP(113)= 0.1524
CP(78)= 0.1378	CP(41)= 0.1164	CP(4)= 0.1810	CP(114)= 0.1025
CP(79)= 0.1262	CP(42)= 0.0693	CP(5)= 0.1323	CP(115)= 0.0526
CP(80)= 0.0864	CP(43)= 0.0222	CP(6)= 0.0921	CP(116)= 0.0371
CP(81)= 0.0391	CP(44)= 0.0306	CP(7)= 0.0514	CP(117)= 0.0216
CP(82)= 0.0203	CP(45)= 0.0114	CP(8)= 0.0433	CP(118)= 0.0105
CP(83)= 0.0237	CP(46)= 0.0477	CP(9)= 0.0288	CP(119)= 0.0916
CP(84)= 0.0271	CP(47)= 0.1441	CP(10)= 0.0120	CP(120)= 0.1483
CP(85)= 0.0419	CP(48)= 0.1771	CP(11)= 0.0306	CP(121)= 0.1687
CP(86)= 0.1032	CP(49)= 0.1754	CP(12)= 0.0675	CP(122)= 0.1644
CP(87)= 0.1646	CP(50)= 0.1713	CP(13)= 0.1344	CP(123)= 0.1262
CP(88)= 0.1728	CP(51)= 0.1021	CP(14)= 0.1678	CP(124)= 0.0880
CP(89)= 0.1819	CP(52)= 0.0577	CP(15)= 0.1695	CP(125)= 0.0404
CP(90)= 0.1298	CP(53)= 0.0266	CP(16)= 0.1323	CP(126)= 0.0200
CP(91)= 0.0854	CP(54)= 0.0080	CP(17)= 0.0950	CP(127)=-0.0100
CP(92)= 0.0411	CP(55)=-0.0200	CP(18)= 0.0446	CP(128)=-0.0123
CP(93)= 0.0163	CP(56)=-0.0461	CP(19)= 0.0328	CP(129)=-0.0325
CP(94)=-0.0103	CP(57)=-0.0288	CP(20)=-0.0022	CP(130)=-0.0384
CP(95)=-0.0238	CP(58)=-0.0227	CP(21)=-0.0237	CP(131)=-0.0353
CP(96)=-0.0346	CP(59)=-0.0441	CP(22)=-0.0345	CP(132)=-0.0342
CP(97)=-0.0249	CP(133)=-0.0303	CP(23)=-0.0289	CP(60)=-0.0413
CP(98)=-0.0413	CP(134)=-0.0800	CP(24)=-0.0306	CP(61)=-0.0810
CP(99)=-0.0477	CP(135)=-0.0854	CP(25)=-0.0255	CP(62)=-0.0847
CP(100)=-0.0812	CP(136)=-0.0776	CP(26)=-0.0303	CP(63)=-0.0738
CP(101)=-0.0922	CP(137)=-0.0755	CP(27)=-0.0863	CP(64)=-0.0702
CP(102)=-0.0920	CP(138)=-0.0649	CP(28)=-0.1013	CP(65)=-0.0567
CP(103)=-0.0760	CP(139)=-0.0679	CP(29)=-0.1003	CP(66)=-0.0681
CP(104)=-0.0587	CP(140)=-0.0841	CP(30)=-0.0573	CP(67)=-0.0717
CP(105)=-0.1037	CP(141)=-0.0795	CP(31)=-0.0548	CP(68)=-0.1097
CP(106)=-0.0749	CP(142)=-0.0174	CP(32)=-0.0793	CP(69)=-0.0811
CP(107)=-0.0461	CP(143)= 0.0016	CP(33)=-0.0750	CP(70)=-0.0174
CP(108)= 0.0289	CP(144)= 0.0206	CP(34)= 0.0116	CP(71)= 0.0198
CP(109)=-0.0043	CP(145)= 0.0077	CP(35)= 0.0049	CP(72)= 0.0136
CP(110)=-0.0507	CP(146)=-0.0225	CP(36)= 0.0160	CP(73)=-0.0063
		CP(37)= 0.0159	

CPB1=-0.2209 CPB2=-0.2213 CPB3=-0.2213 CPB4=-0.2216

CONTOURED AFTBODY CONFIGURATION

MACH=0.598 PT= 931.070PSF P1= 731.267PSF Q= 182.880PSF RE= 1.455X 10**-6/FT

CP(75)= 0.3023	CP(38)= 0.4047	CP(1)= 0.2894	CP(111)= 0.3845
CP(76)= 0.1618	CP(39)= 0.2444	CP(2)= 0.1903	CP(112)= 0.1312
CP(77)= 0.0746	CP(40)= 0.0825	CP(3)= 0.1163	CP(113)= 0.0309
CP(78)= 0.0211	CP(41)= 0.0089	CP(4)= 0.0423	CP(114)= 0.0126
CP(79)= 0.0164	CP(42)= 0.0044	CP(5)= 0.0124	CP(115)=-0.0057
CP(80)= 0.0026	CP(43)=-0.0001	CP(6)=-0.0001	CP(116)= 0.0128
CP(81)= 0.0073	CP(44)= 0.0077	CP(7)= 0.0014	CP(117)= 0.0313
CP(82)= 0.0077	CP(45)= 0.0526	CP(8)= 0.0061	CP(118)= 0.0542
CP(83)= 0.0227	CP(46)= 0.0820	CP(9)= 0.0172	CP(119)= 0.0864
CP(84)= 0.0376	CP(47)= 0.0836	CP(10)= 0.0341	CP(120)= 0.0789
CP(85)= 0.0692	CP(48)= 0.0687	CP(11)= 0.0679	CP(121)= 0.0589
CP(86)= 0.0691	CP(49)= 0.0435	CP(12)= 0.0825	CP(122)= 0.0282
CP(87)= 0.0691	CP(50)= 0.0073	CP(13)= 0.0792	CP(123)=-0.0081
CP(88)= 0.0424	CP(51)=-0.0430	CP(14)= 0.0557	CP(124)=-0.0443
CP(89)= 0.0156	CP(52)=-0.0572	CP(15)= 0.0305	CP(125)=-0.0596
CP(90)=-0.0318	CP(53)=-0.0639	CP(16)=-0.0070	CP(126)=-0.0642
CP(91)=-0.0469	CP(54)=-0.0721	CP(17)=-0.0446	CP(127)=-0.0734
CP(92)=-0.0619	CP(55)=-0.0710	CP(18)=-0.0643	CP(128)=-0.0682
CP(93)=-0.0691	CP(56)=-0.0773	CP(19)=-0.0651	CP(129)=-0.0711
CP(94)=-0.0710	CP(57)=-0.0644	CP(20)=-0.0759	CP(130)=-0.0659
CP(95)=-0.0707	CP(58)=-0.0632	CP(21)=-0.0703	CP(131)=-0.0636
CP(96)=-0.0699	CP(59)=-0.0623	CP(22)=-0.0694	CP(132)=-0.0750
CP(97)=-0.0639	CP(133)=-0.0899	CP(23)=-0.0658	CP(60)=-0.0900
CP(98)=-0.0687	CP(134)=-0.0845	CP(24)=-0.0675	CP(61)=-0.0946
CP(99)=-0.0786	CP(135)=-0.0703	CP(25)=-0.0667	CP(62)=-0.0832
CP(100)=-0.0958	CP(136)=-0.0553	CP(26)=-0.0725	CP(63)=-0.0521
CP(101)=-0.0826	CP(137)=-0.0558	CP(27)=-0.0935	CP(64)=-0.0486
CP(102)=-0.0718	CP(138)=-0.0513	CP(28)=-0.0876	CP(65)=-0.0466
CP(103)=-0.0585	CP(139)=-0.0632	CP(29)=-0.0784	CP(66)=-0.0599
CP(104)=-0.0604	CP(140)=-0.0576	CP(30)=-0.0473	CP(67)=-0.0580
CP(105)=-0.0529	CP(141)=-0.0080	CP(31)=-0.0541	CP(68)=-0.0372
CP(106)=-0.0255	CP(142)= 0.0156	CP(32)=-0.0610	CP(69)=-0.0068
CP(107)= 0.0018	CP(143)=-0.0016	CP(33)=-0.0068	CP(70)= 0.0156
CP(108)=-0.0030	CP(144)=-0.0187	CP(34)= 0.0168	CP(71)=-0.0159
CP(109)=-0.0640	CP(145)=-0.0424	CP(35)=-0.0339	CP(72)=-0.0449
CP(110)=-0.0860	CP(146)=-0.0822	CP(36)=-0.0725	CP(73)=-0.0650
CP(174)=-0.1191	CP(161)=-0.1230	CP(37)=-0.0941	CP(74)=-0.0952
CP(175)=-0.1444	CP(162)=-0.1659	CP(147)=-0.1191	CP(187)=-0.1230
CP(176)=-0.1865	CP(163)=-0.1906	CP(148)=-0.1754	CP(188)=-0.1825
CP(177)=-0.1832	CP(164)=-0.1777	CP(149)=-0.1905	CP(189)=-0.1904
CP(178)=-0.1383	CP(165)=-0.1289	CP(150)=-0.1666	CP(190)=-0.1537
CP(179)=-0.0785	CP(166)=-0.0631	CP(151)=-0.1163	CP(191)=-0.0993
CP(180)=-0.0151	CP(167)= 0.0093	CP(152)=-0.0450	CP(192)=-0.0246
CP(181)= 0.0483	CP(168)= 0.0565	CP(153)= 0.0238	CP(193)= 0.0502
CP(182)= 0.0869	CP(169)= 0.0939	CP(154)= 0.0663	CP(194)= 0.0770
CP(183)= 0.1097	CP(170)= 0.1135	CP(155)= 0.1022	CP(195)= 0.1066
CP(184)= 0.1216	CP(171)= 0.1226	CP(156)= 0.1169	CP(196)= 0.1211
CP(185)= 0.1138	CP(172)= 0.1128	CP(157)= 0.1218	CP(197)= 0.1192
CP(186)= 0.0569	CP(173)= 0.0746	CP(158)= 0.1222	CP(198)= 0.1173
		CP(159)= 0.1161	CP(199)= 0.0958
		CP(160)= 0.1099	

CPB1= 0.0026 CPB2= 0.0022 CPB3= 0.0018 CPB4= 0.0010

CONTOURED AFTBODY CONFIGURATION

MACH=0.598 PT=1596.500PSF P1=1253.572PSF Q= 313.855PSF RE= 2.496X 10**-6/FT

CP(75)= 0.2975	CP(38)= 0.4031	CP(1)= 0.2867	CP(111)= 0.3721
CP(76)= 0.1318	CP(39)= 0.2384	CP(2)= 0.1980	CP(112)= 0.1215
CP(77)= 0.0638	CP(40)= 0.0787	CP(3)= 0.1214	CP(113)= 0.0294
CP(78)= 0.0115	CP(41)= 0.0054	CP(4)= 0.0448	CP(114)= 0.0089
CP(79)= 0.0168	CP(42)= 0.0045	CP(5)= 0.0203	CP(115)=-0.0116
CP(80)= 0.0012	CP(43)= 0.0035	CP(6)= 0.0070	CP(116)= 0.0079
CP(81)= 0.0049	CP(44)= 0.0143	CP(7)= 0.0063	CP(117)= 0.0274
CP(82)= 0.0035	CP(45)= 0.0503	CP(8)= 0.0097	CP(118)= 0.0508
CP(83)= 0.0189	CP(46)= 0.0789	CP(9)= 0.0189	CP(119)= 0.0849
CP(84)= 0.0342	CP(47)= 0.0830	CP(10)= 0.0310	CP(120)= 0.0764
CP(85)= 0.0668	CP(48)= 0.0679	CP(11)= 0.0652	CP(121)= 0.0556
CP(86)= 0.0691	CP(49)= 0.0411	CP(12)= 0.0829	CP(122)= 0.0262
CP(87)= 0.0714	CP(50)= 0.0059	CP(13)= 0.0820	CP(123)=-0.0115
CP(88)= 0.0450	CP(51)=-0.0464	CP(14)= 0.0592	CP(124)=-0.0493
CP(89)= 0.0196	CP(52)=-0.0599	CP(15)= 0.0333	CP(125)=-0.0642
CP(90)=-0.0306	CP(53)=-0.0655	CP(16)=-0.0049	CP(126)=-0.0688
CP(91)=-0.0460	CP(54)=-0.0730	CP(17)=-0.0432	CP(127)=-0.0768
CP(92)=-0.0614	CP(55)=-0.0756	CP(18)=-0.0619	CP(128)=-0.0717
CP(93)=-0.0700	CP(56)=-0.0837	CP(19)=-0.0649	CP(129)=-0.0757
CP(94)=-0.0715	CP(57)=-0.0682	CP(20)=-0.0778	CP(130)=-0.0687
CP(95)=-0.0709	CP(58)=-0.0656	CP(21)=-0.0713	CP(131)=-0.0642
CP(96)=-0.0688	CP(59)=-0.0641	CP(22)=-0.0703	CP(132)=-0.0738
CP(97)=-0.0630	CP(133)=-0.0932	CP(23)=-0.0647	CP(60)=-0.0947
CP(98)=-0.0702	CP(134)=-0.0870	CP(24)=-0.0662	CP(61)=-0.0994
CP(99)=-0.0817	CP(135)=-0.0720	CP(25)=-0.0667	CP(62)=-0.0857
CP(100)=-0.0979	CP(136)=-0.0557	CP(26)=-0.0751	CP(63)=-0.0536
CP(101)=-0.0871	CP(137)=-0.0574	CP(27)=-0.0970	CP(64)=-0.0516
CP(102)=-0.0717	CP(138)=-0.0526	CP(28)=-0.0931	CP(65)=-0.0495
CP(103)=-0.0585	CP(139)=-0.0651	CP(29)=-0.0827	CP(66)=-0.0634
CP(104)=-0.0626	CP(140)=-0.0584	CP(30)=-0.0481	CP(67)=-0.0590
CP(105)=-0.0543	CP(141)=-0.0077	CP(31)=-0.0557	CP(68)=-0.0403
CP(106)=-0.0261	CP(142)= 0.0152	CP(32)=-0.0647	CP(69)=-0.0079
CP(107)= 0.0021	CP(143)=-0.0023	CP(33)=-0.0079	CP(70)= 0.0152
CP(108)=-0.0027	CP(144)=-0.0197	CP(34)= 0.0186	CP(71)=-0.0183
CP(109)=-0.0652	CP(145)=-0.0429	CP(35)=-0.0352	CP(72)=-0.0464
CP(110)=-0.0869	CP(146)=-0.0848	CP(36)=-0.0736	CP(73)=-0.0649
CP(174)=-0.1203	CP(161)=-0.1246	CP(37)=-0.0963	CP(74)=-0.0965
CP(175)=-0.1461	CP(162)=-0.1677	CP(147)=-0.1203	CP(187)=-0.1246
CP(176)=-0.1917	CP(163)=-0.1948	CP(148)=-0.1775	CP(188)=-0.1886
CP(177)=-0.1878	CP(164)=-0.1832	CP(149)=-0.1957	CP(189)=-0.1967
CP(178)=-0.1423	CP(165)=-0.1346	CP(150)=-0.1708	CP(190)=-0.1595
CP(179)=-0.0816	CP(166)=-0.0662	CP(151)=-0.1208	CP(191)=-0.1052
CP(180)=-0.0164	CP(167)= 0.0093	CP(152)=-0.0472	CP(192)=-0.0343
CP(181)= 0.0487	CP(168)= 0.0574	CP(153)= 0.0241	CP(193)= 0.0365
CP(182)= 0.0886	CP(169)= 0.0964	CP(154)= 0.0677	CP(194)= 0.0781
CP(183)= 0.1139	CP(170)= 0.1172	CP(155)= 0.1042	CP(195)= 0.1095
CP(184)= 0.1254	CP(171)= 0.1258	CP(156)= 0.1186	CP(196)= 0.1240
CP(185)= 0.1144	CP(172)= 0.1122	CP(157)= 0.1243	CP(197)= 0.1202
CP(186)= 0.0549	CP(173)= 0.0734	CP(158)= 0.1251	CP(198)= 0.1165
		CP(159)= 0.1168	CP(199)= 0.0947
		CP(160)= 0.1085	

CPB1=-0.0032 CPB2=-0.0052 CPB3=-0.0039 CPB4=-0.0073

CONTOURED AFTBODY CONFIGURATION

MACH=0.599 PT=2557.760PSF P1=2006.377PSF Q= 504.44APSF RE= 4.000X 10**-6/FT

CP(75)= 0.2894
CP(76)= 0.1200
CP(77)= 0.0529
CP(78)=-0.0003
CP(79)= 0.0167
CP(80)=-0.0017
CP(81)= 0.0021
CP(82)= 0.0004
CP(83)= 0.0160
CP(84)= 0.0315
CP(85)= 0.0645
CP(86)= 0.0679
CP(87)= 0.0713
CP(88)= 0.0436
CP(89)= 0.0182
CP(90)=-0.0341
CP(91)=-0.0482
CP(92)=-0.0624
CP(93)=-0.0706
CP(94)=-0.0725
CP(95)=-0.0718
CP(96)=-0.0683
CP(97)=-0.0626
CP(98)=-0.0715
CP(99)=-0.0843
CP(100)=-0.0990
CP(101)=-0.0884
CP(102)=-0.0723
CP(103)=-0.0589
CP(104)=-0.0647
CP(105)=-0.0546
CP(106)=-0.0264
CP(107)= 0.0018
CP(108)=-0.0028
CP(109)=-0.0659
CP(110)=-0.0876
CP(174)=-0.1217
CP(175)=-0.1466
CP(176)=-0.1940
CP(177)=-0.1894
CP(178)=-0.1443
CP(179)=-0.0831
CP(180)=-0.0164
CP(181)= 0.0504
CP(182)= 0.0915
CP(183)= 0.1158
CP(184)= 0.1268
CP(185)= 0.1124
CP(186)= 0.0563

CP(38)= 0.4017
CP(39)= 0.2500
CP(40)= 0.0927
CP(41)= 0.0141
CP(42)= 0.0058
CP(43)=-0.0026
CP(44)= 0.0178
CP(45)= 0.0478
CP(46)= 0.0757
CP(47)= 0.0805
CP(48)= 0.0663
CP(49)= 0.0402
CP(50)= 0.0049
CP(51)=-0.0492
CP(52)=-0.0610
CP(53)=-0.0650
CP(54)=-0.0736
CP(55)=-0.0747
CP(56)=-0.0854
CP(57)=-0.0678
CP(58)=-0.0647
CP(59)=-0.0628
CP(133)=-0.0928
CP(134)=-0.0868
CP(135)=-0.0718
CP(136)=-0.0550
CP(137)=-0.0500
CP(138)=-0.0514
CP(139)=-0.0646
CP(140)=-0.0580
CP(141)=-0.0072
CP(142)= 0.0170
CP(143)=-0.0015
CP(144)=-0.0199
CP(145)=-0.0428
CP(146)=-0.0847
CP(161)=-0.1254
CP(162)=-0.1679
CP(163)=-0.1964
CP(164)=-0.1855
CP(165)=-0.1370
CP(166)=-0.0682
CP(167)= 0.0091
CP(168)= 0.0587
CP(169)= 0.0983
CP(170)= 0.1189
CP(171)= 0.1271
CP(172)= 0.1100
CP(173)= 0.0700

CP(1)= 0.7874
CP(2)= 0.1985
CP(3)= 0.1201
CP(4)= 0.0418
CP(5)= 0.0212
CP(6)= 0.0081
CP(7)= 0.0067
CP(8)= 0.0108
CP(9)= 0.0191
CP(10)= 0.0307
CP(11)= 0.0662
CP(12)= 0.0849
CP(13)= 0.0842
CP(14)= 0.0606
CP(15)= 0.0352
CP(16)=-0.0033
CP(17)=-0.0418
CP(18)=-0.0617
CP(19)=-0.0653
CP(20)=-0.0777
CP(21)=-0.0709
CP(22)=-0.0696
CP(23)=-0.0642
CP(24)=-0.0658
CP(25)=-0.0665
CP(26)=-0.0749
CP(27)=-0.0965
CP(28)=-0.0964
CP(29)=-0.0872
CP(30)=-0.0478
CP(31)=-0.0557
CP(32)=-0.0655
CP(33)=-0.0075
CP(34)= 0.0195
CP(35)=-0.0365
CP(36)=-0.0745
CP(37)=-0.0977
CP(147)=-0.1217
CP(148)=-0.1805
CP(149)=-0.1984
CP(150)=-0.1748
CP(151)=-0.1263
CP(152)=-0.0505
CP(153)= 0.0244
CP(154)= 0.0683
CP(155)= 0.1062
CP(156)= 0.1203
CP(157)= 0.1260
CP(158)= 0.1261
CP(159)= 0.1160
CP(160)= 0.1059

CP(111)= 0.3639
CP(112)= 0.1162
CP(113)= 0.0277
CP(114)= 0.0070
CP(115)=-0.0136
CP(116)= 0.0070
CP(117)= 0.0277
CP(118)= 0.0516
CP(119)= 0.0863
CP(120)= 0.0774
CP(121)= 0.0571
CP(122)= 0.0272
CP(123)=-0.0108
CP(124)=-0.0489
CP(125)=-0.0633
CP(126)=-0.0679
CP(127)=-0.0760
CP(128)=-0.0698
CP(129)=-0.0759
CP(130)=-0.0695
CP(131)=-0.0632
CP(132)=-0.0727
CP(60)=-0.0941
CP(61)=-0.0986
CP(62)=-0.0851
CP(63)=-0.0525
CP(64)=-0.0503
CP(65)=-0.0487
CP(66)=-0.0633
CP(67)=-0.0580
CP(68)=-0.0384
CP(69)=-0.0064
CP(70)= 0.0170
CP(71)=-0.0177
CP(72)=-0.0464
CP(73)=-0.0650
CP(74)=-0.0976
CP(187)=-0.1254
CP(188)=-0.1915
CP(189)=-0.2003
CP(190)=-0.1633
CP(191)=-0.1080
CP(192)=-0.0353
CP(193)= 0.0375
CP(194)= 0.0798
CP(195)= 0.1113
CP(196)= 0.1250
CP(197)= 0.1208
CP(198)= 0.1166
CP(199)= 0.0943

CPB1=-0.0086 CPB2=-0.0096 CPB3=-0.0091 CPB4=-0.0128

CONTOURED AFTBODY CONFIGURATION

MACH=0.600 PT=3388.210PSF P1=2655.886PSF Q= 669.805PSF RE= 5.307X 10**-6/FT

CP(75)= 0.2880	CP(38)= 0.4011	CP(1)= 0.2900	CP(111)= 0.3605
CP(76)= 0.1159	CP(39)= 0.2496	CP(2)= 0.1983	CP(112)= 0.1112
CP(77)= 0.0503	CP(40)= 0.0930	CP(3)= 0.1197	CP(113)= 0.0261
CP(78)=-0.0048	CP(41)= 0.0116	CP(4)= 0.0411	CP(114)= 0.0059
CP(79)= 0.0163	CP(42)= 0.0042	CP(5)= 0.0223	CP(115)=-0.0143
CP(80)=-0.0020	CP(43)=-0.0033	CP(6)= 0.0094	CP(116)= 0.0071
CP(81)= 0.0024	CP(44)= 0.0218	CP(7)= 0.0082	CP(117)= 0.0285
CP(82)= 0.0007	CP(45)= 0.0479	CP(8)= 0.0117	CP(118)= 0.0526
CP(83)= 0.0162	CP(46)= 0.0761	CP(9)= 0.0203	CP(119)= 0.0871
CP(84)= 0.0316	CP(47)= 0.0813	CP(10)= 0.0313	CP(120)= 0.0784
CP(85)= 0.0649	CP(48)= 0.0670	CP(11)= 0.0671	CP(121)= 0.0585
CP(86)= 0.0682	CP(49)= 0.0407	CP(12)= 0.0860	CP(122)= 0.0290
CP(87)= 0.0714	CP(50)= 0.0052	CP(13)= 0.0855	CP(123)=-0.0098
CP(88)= 0.0438	CP(51)=-0.0497	CP(14)= 0.0619	CP(124)=-0.0485
CP(89)= 0.0188	CP(52)=-0.0614	CP(15)= 0.0356	CP(125)=-0.0625
CP(90)=-0.0340	CP(53)=-0.0644	CP(16)=-0.0028	CP(126)=-0.0666
CP(91)=-0.0481	CP(54)=-0.0726	CP(17)=-0.0412	CP(127)=-0.0757
CP(92)=-0.0621	CP(55)=-0.0736	CP(18)=-0.0614	CP(128)=-0.0688
CP(93)=-0.0698	CP(56)=-0.0858	CP(19)=-0.0639	CP(129)=-0.0759
CP(94)=-0.0714	CP(57)=-0.0667	CP(20)=-0.0772	CP(130)=-0.0703
CP(95)=-0.0703	CP(58)=-0.0637	CP(21)=-0.0703	CP(131)=-0.0627
CP(96)=-0.0665	CP(59)=-0.0619	CP(22)=-0.0689	CP(132)=-0.0722
CP(97)=-0.0619	CP(133)=-0.0921	CP(23)=-0.0634	CP(60)=-0.0932
CP(98)=-0.0711	CP(134)=-0.0859	CP(24)=-0.0651	CP(61)=-0.0979
CP(99)=-0.0849	CP(135)=-0.0717	CP(25)=-0.0664	CP(62)=-0.0839
CP(100)=-0.0981	CP(136)=-0.0539	CP(26)=-0.0746	CP(63)=-0.0509
CP(101)=-0.0881	CP(137)=-0.0604	CP(27)=-0.0962	CP(64)=-0.0493
CP(102)=-0.0712	CP(138)=-0.0503	CP(28)=-0.0976	CP(65)=-0.0481
CP(103)=-0.0579	CP(139)=-0.0638	CP(29)=-0.0894	CP(66)=-0.0640
CP(104)=-0.0652	CP(140)=-0.0571	CP(30)=-0.0474	CP(67)=-0.0571
CP(105)=-0.0544	CP(141)=-0.0059	CP(31)=-0.0556	CP(68)=-0.0376
CP(106)=-0.0260	CP(142)= 0.0187	CP(32)=-0.0658	CP(69)=-0.0051
CP(107)= 0.0023	CP(143)=-0.0003	CP(33)=-0.0073	CP(70)= 0.0187
CP(108)=-0.0021	CP(144)=-0.0193	CP(34)= 0.0199	CP(71)=-0.0174
CP(109)=-0.0662	CP(145)=-0.0420	CP(35)=-0.0370	CP(72)=-0.0464
CP(110)=-0.0876	CP(146)=-0.0846	CP(36)=-0.0754	CP(73)=-0.0645
CP(174)=-0.1219	CP(161)=-0.1254	CP(37)=-0.0975	CP(74)=-0.0978
CP(175)=-0.1466	CP(162)=-0.1680	CP(147)=-0.1219	CP(187)=-0.1254
CP(176)=-0.1951	CP(163)=-0.1977	CP(148)=-0.1814	CP(188)=-0.1926
CP(177)=-0.1908	CP(164)=-0.1871	CP(149)=-0.1992	CP(189)=-0.2006
CP(178)=-0.1461	CP(165)=-0.1386	CP(150)=-0.1764	CP(190)=-0.1650
CP(179)=-0.0846	CP(166)=-0.0684	CP(151)=-0.1287	CP(191)=-0.1091
CP(180)=-0.0170	CP(167)= 0.0102	CP(152)=-0.0514	CP(192)=-0.0352
CP(181)= 0.0506	CP(168)= 0.0601	CP(153)= 0.0250	CP(193)= 0.0388
CP(182)= 0.0921	CP(169)= 0.1000	CP(154)= 0.0694	CP(194)= 0.0821
CP(183)= 0.1167	CP(170)= 0.1211	CP(155)= 0.1077	CP(195)= 0.1142
CP(184)= 0.1272	CP(171)= 0.1286	CP(156)= 0.1242	CP(196)= 0.1275
CP(185)= 0.1109	CP(172)= 0.1091	CP(157)= 0.1274	CP(197)= 0.1225
CP(186)= 0.0564	CP(173)= 0.0686	CP(158)= 0.1273	CP(198)= 0.1175
		CP(159)= 0.1167	CP(199)= 0.0957
		CP(160)= 0.1060	

CPB1=-0.0112 CPB2=-0.0118 CPB3=-0.0125 CPB4=-0.0150

CONTOURED AFTBODY CONFIGURATION

MACH=0.896 PT= 747.407PSF PI= 443.829PSF Q= 249.558PSF RE= 1.465X 10**-6/FT

CP(75)= 0.3748	CP(38)= 0.4878	CP(1)= 0.3638	CP(111)= 0.4652
CP(76)= 0.2147	CP(39)= 0.3065	CP(2)= 0.2523	CP(112)= 0.1760
CP(77)= 0.1120	CP(40)= 0.1123	CP(3)= 0.1563	CP(113)= 0.0428
CP(78)= 0.0388	CP(41)= 0.0155	CP(4)= 0.0604	CP(114)= 0.0172
CP(79)= 0.0209	CP(42)= 0.0081	CP(5)= 0.0204	CP(115)=-0.0085
CP(80)= 0.0028	CP(43)= 0.0008	CP(6)= 0.0042	CP(116)= 0.0143
CP(81)= 0.0100	CP(44)= 0.0117	CP(7)= 0.0068	CP(117)= 0.0371
CP(82)= 0.0140	CP(45)= 0.0731	CP(8)= 0.0175	CP(118)= 0.0708
CP(83)= 0.0361	CP(46)= 0.1146	CP(9)= 0.0353	CP(119)= 0.1167
CP(84)= 0.0581	CP(47)= 0.1203	CP(10)= 0.0558	CP(120)= 0.1120
CP(85)= 0.0983	CP(48)= 0.1025	CP(11)= 0.0965	CP(121)= 0.0885
CP(86)= 0.0990	CP(49)= 0.0723	CP(12)= 0.1147	CP(122)= 0.0486
CP(87)= 0.0997	CP(50)= 0.0270	CP(13)= 0.1104	CP(123)=-0.0016
CP(88)= 0.0639	CP(51)=-0.0433	CP(14)= 0.0794	CP(124)=-0.0518
CP(89)= 0.0296	CP(52)=-0.0681	CP(15)= 0.0474	CP(125)=-0.0748
CP(90)=-0.0361	CP(53)=-0.0799	CP(16)=-0.0046	CP(126)=-0.0835
CP(91)=-0.0577	CP(54)=-0.0949	CP(17)=-0.0566	CP(127)=-0.0959
CP(92)=-0.0794	CP(55)=-0.0919	CP(18)=-0.0803	CP(128)=-0.0892
CP(93)=-0.0905	CP(56)=-0.0971	CP(19)=-0.0861	CP(129)=-0.0888
CP(94)=-0.0895	CP(57)=-0.0804	CP(20)=-0.0998	CP(130)=-0.0783
CP(95)=-0.0870	CP(58)=-0.0734	CP(21)=-0.0882	CP(131)=-0.0764
CP(96)=-0.0835	CP(59)=-0.0751	CP(22)=-0.0863	CP(132)=-0.0879
CP(97)=-0.0771	CP(133)=-0.1192	CP(23)=-0.0820	CP(60)=-0.1216
CP(98)=-0.0804	CP(134)=-0.1119	CP(24)=-0.0835	CP(61)=-0.1290
CP(99)=-0.0928	CP(135)=-0.0870	CP(25)=-0.0817	CP(62)=-0.1143
CP(100)=-0.1276	CP(136)=-0.0665	CP(26)=-0.0872	CP(63)=-0.0629
CP(101)=-0.1021	CP(137)=-0.0617	CP(27)=-0.1222	CP(64)=-0.0596
CP(102)=-0.0834	CP(138)=-0.0566	CP(28)=-0.1069	CP(65)=-0.0552
CP(103)=-0.0665	CP(139)=-0.0772	CP(29)=-0.0901	CP(66)=-0.0759
CP(104)=-0.0688	CP(140)=-0.0714	CP(30)=-0.0526	CP(67)=-0.0704
CP(105)=-0.0563	CP(141)= 0.0054	CP(31)=-0.0607	CP(68)=-0.0385
CP(106)=-0.0170	CP(142)= 0.0388	CP(32)=-0.0689	CP(69)= 0.0045
CP(107)= 0.0224	CP(143)= 0.0169	CP(33)= 0.0103	CP(70)= 0.0388
CP(108)= 0.0166	CP(144)=-0.0051	CP(34)= 0.0402	CP(71)=-0.0021
CP(109)=-0.0663	CP(145)=-0.0423	CP(35)=-0.0266	CP(72)=-0.0430
CP(110)=-0.1080	CP(146)=-0.1042	CP(36)=-0.0842	CP(73)=-0.0744
CP(174)=-0.1581	CP(161)=-0.1722	CP(37)=-0.1202	CP(74)=-0.1228
CP(175)=-0.2104	CP(162)=-0.2489	CP(147)=-0.1581	CP(187)=-0.1722
CP(176)=-0.2869	CP(163)=-0.3040	CP(148)=-0.2676	CP(188)=-0.2699
CP(177)=-0.2536	CP(164)=-0.2421	CP(149)=-0.2874	CP(189)=-0.2706
CP(178)=-0.1544	CP(165)=-0.1415	CP(150)=-0.2150	CP(190)=-0.1939
CP(179)=-0.0613	CP(166)=-0.0462	CP(151)=-0.1184	CP(191)=-0.0988
CP(180)= 0.0064	CP(167)= 0.0327	CP(152)=-0.0258	CP(192)=-0.0147
CP(181)= 0.0740	CP(168)= 0.0829	CP(153)= 0.0466	CP(193)= 0.0694
CP(182)= 0.1136	CP(169)= 0.1216	CP(154)= 0.0930	CP(194)= 0.1023
CP(183)= 0.1425	CP(170)= 0.1472	CP(155)= 0.1297	CP(195)= 0.1349
CP(184)= 0.1520	CP(171)= 0.1408	CP(156)= 0.1507	CP(196)= 0.1560
CP(185)= 0.1559	CP(172)= 0.1527	CP(157)= 0.1578	CP(197)= 0.1554
CP(186)= 0.0887	CP(173)= 0.1146	CP(158)= 0.1614	CP(198)= 0.1547
		CP(159)= 0.1553	CP(199)= 0.1310
		CP(160)= 0.1491	

CPB1= 0.0362 CPB2= 0.0345 CPB3= 0.0348 CPB4= 0.0322

CONTOURED AFTBODY CONFIGURATION

MACH=0.892 PT=1273.350PSF P1= 759.141PSF Q= 423.139PSF RE= 2.498X 10**-6/FT

CP(75)= 0.3679	CP(38)= 0.4818	CP(1)= 0.3584	CP(111)= 0.4511
CP(76)= 0.1832	CP(39)= 0.2995	CP(2)= 0.2503	CP(112)= 0.1680
CP(77)= 0.1022	CP(40)= 0.1084	CP(3)= 0.1559	CP(113)= 0.0400
CP(78)= 0.0303	CP(41)= 0.0041	CP(4)= 0.0616	CP(114)= 0.0130
CP(79)= 0.0223	CP(42)= 0.0065	CP(5)= 0.0234	CP(115)=-0.0141
CP(80)=-0.0023	CP(43)= 0.0040	CP(6)= 0.0033	CP(116)= 0.0111
CP(81)= 0.0036	CP(44)= 0.0091	CP(7)= 0.0033	CP(117)= 0.0363
CP(82)= 0.0019	CP(45)= 0.0703	CP(8)= 0.0070	CP(118)= 0.0720
CP(83)= 0.0242	CP(46)= 0.1107	CP(9)= 0.0222	CP(119)= 0.1208
CP(84)= 0.0465	CP(47)= 0.1185	CP(10)= 0.0432	CP(120)= 0.1135
CP(85)= 0.0937	CP(48)= 0.1021	CP(11)= 0.0920	CP(121)= 0.0876
CP(86)= 0.1005	CP(49)= 0.0690	CP(12)= 0.1168	CP(122)= 0.0501
CP(87)= 0.1074	CP(50)= 0.0225	CP(13)= 0.1181	CP(123)=-0.0050
CP(88)= 0.0748	CP(51)=-0.0524	CP(14)= 0.0903	CP(124)=-0.0600
CP(89)= 0.0402	CP(52)=-0.0762	CP(15)= 0.0587	CP(125)=-0.0825
CP(90)=-0.0340	CP(53)=-0.0861	CP(16)= 0.0021	CP(126)=-0.0891
CP(91)=-0.0577	CP(54)=-0.0999	CP(17)=-0.0545	CP(127)=-0.1014
CP(92)=-0.0814	CP(55)=-0.0963	CP(18)=-0.0818	CP(128)=-0.0920
CP(93)=-0.0943	CP(56)=-0.1031	CP(19)=-0.0881	CP(129)=-0.0921
CP(94)=-0.0942	CP(57)=-0.0826	CP(20)=-0.1062	CP(130)=-0.0814
CP(95)=-0.0914	CP(58)=-0.0754	CP(21)=-0.0934	CP(131)=-0.0773
CP(96)=-0.0844	CP(59)=-0.0768	CP(22)=-0.0914	CP(132)=-0.0881
CP(97)=-0.0746	CP(133)=-0.1243	CP(23)=-0.0802	CP(60)=-0.1274
CP(98)=-0.0812	CP(134)=-0.1152	CP(24)=-0.0811	CP(61)=-0.1360
CP(99)=-0.0984	CP(135)=-0.0890	CP(25)=-0.0812	CP(62)=-0.1195
CP(100)=-0.1381	CP(136)=-0.0643	CP(26)=-0.0943	CP(63)=-0.0632
CP(101)=-0.1170	CP(137)=-0.0634	CP(27)=-0.1362	CP(64)=-0.0583
CP(102)=-0.0899	CP(138)=-0.0555	CP(28)=-0.1207	CP(65)=-0.0554
CP(103)=-0.0687	CP(139)=-0.0788	CP(29)=-0.0992	CP(66)=-0.0785
CP(104)=-0.0733	CP(140)=-0.0724	CP(30)=-0.0540	CP(67)=-0.0734
CP(105)=-0.0654	CP(141)= 0.0075	CP(31)=-0.0665	CP(68)=-0.0401
CP(106)=-0.0227	CP(142)= 0.0404	CP(32)=-0.0822	CP(69)= 0.0069
CP(107)= 0.0200	CP(143)= 0.0174	CP(33)= 0.0048	CP(70)= 0.0404
CP(108)= 0.0157	CP(144)=-0.0056	CP(34)= 0.0424	CP(71)=-0.0044
CP(109)=-0.0720	CP(145)=-0.0419	CP(35)=-0.0295	CP(72)=-0.0448
CP(110)=-0.1092	CP(146)=-0.1044	CP(36)=-0.0884	CP(73)=-0.0748
CP(174)=-0.1610	CP(161)=-0.1754	CP(37)=-0.1242	CP(74)=-0.1242
CP(175)=-0.2140	CP(162)=-0.2529	CP(147)=-0.1610	CP(187)=-0.1754
CP(176)=-0.3113	CP(163)=-0.3246	CP(148)=-0.2799	CP(188)=-0.2981
CP(177)=-0.2777	CP(164)=-0.2551	CP(149)=-0.3161	CP(189)=-0.3076
CP(178)=-0.1723	CP(165)=-0.1498	CP(150)=-0.2243	CP(190)=-0.1996
CP(179)=-0.0746	CP(166)=-0.0499	CP(151)=-0.1262	CP(191)=-0.1013
CP(180)=-0.0004	CP(167)= 0.0342	CP(152)=-0.0282	CP(192)=-0.0173
CP(181)= 0.0738	CP(168)= 0.0873	CP(153)= 0.0487	CP(193)= 0.0668
CP(182)= 0.1165	CP(169)= 0.1284	CP(154)= 0.0972	CP(194)= 0.1105
CP(183)= 0.1464	CP(170)= 0.1541	CP(155)= 0.1353	CP(195)= 0.1446
CP(184)= 0.1630	CP(171)= 0.1669	CP(156)= 0.1561	CP(196)= 0.1641
CP(185)= 0.1556	CP(172)= 0.1553	CP(157)= 0.1632	CP(197)= 0.1617
CP(186)= 0.0854	CP(173)= 0.1093	CP(158)= 0.1652	CP(198)= 0.1592
		CP(159)= 0.1567	CP(199)= 0.1307
		CP(160)= 0.1481	

CPB1= 0.0254 CPB2= 0.0259 CPB3= 0.0240 CPB4= 0.0242

CONTOURED AFTBODY CONFIGURATION

MACH=0.898 PT=2037.890PSF P1=1206.996PSF Q= 681.957PSF RE= 4.002X 10**-6/FT

CP(75)= 0.3666	CP(38)= 0.4940	CP(1)= 0.3613	CP(111)= 0.4440
CP(76)= 0.1757	CP(39)= 0.3159	CP(2)= 0.2532	CP(112)= 0.1625
CP(77)= 0.0938	CP(40)= 0.1252	CP(3)= 0.1575	CP(113)= 0.0403
CP(78)= 0.0225	CP(41)= 0.0197	CP(4)= 0.0618	CP(114)= 0.0117
CP(79)= 0.0257	CP(42)= 0.0099	CP(5)= 0.0259	CP(115)=-0.0169
CP(80)=-0.0008	CP(43)= 0.0001	CP(6)= 0.0054	CP(116)= 0.0103
CP(81)= 0.0049	CP(44)= 0.0136	CP(7)= 0.0049	CP(117)= 0.0375
CP(82)= 0.0026	CP(45)= 0.0704	CP(8)= 0.0080	CP(118)= 0.0730
CP(83)= 0.0250	CP(46)= 0.1112	CP(9)= 0.0231	CP(119)= 0.1230
CP(84)= 0.0473	CP(47)= 0.1208	CP(10)= 0.0437	CP(120)= 0.1152
CP(85)= 0.0953	CP(48)= 0.1036	CP(11)= 0.0945	CP(121)= 0.0895
CP(86)= 0.1030	CP(49)= 0.0706	CP(12)= 0.1202	CP(122)= 0.0524
CP(87)= 0.1108	CP(50)= 0.0235	CP(13)= 0.1221	CP(123)=-0.0043
CP(88)= 0.0778	CP(51)=-0.0536	CP(14)= 0.0940	CP(124)=-0.0610
CP(89)= 0.0440	CP(52)=-0.0765	CP(15)= 0.0621	CP(125)=-0.0828
CP(90)=-0.0317	CP(53)=-0.0847	CP(16)= 0.0052	CP(126)=-0.0890
CP(91)=-0.0556	CP(54)=-0.0962	CP(17)=-0.0517	CP(127)=-0.1016
CP(92)=-0.0795	CP(55)=-0.0952	CP(18)=-0.0804	CP(128)=-0.0908
CP(93)=-0.0921	CP(56)=-0.1042	CP(19)=-0.0863	CP(129)=-0.0932
CP(94)=-0.0931	CP(57)=-0.0809	CP(20)=-0.1057	CP(130)=-0.0814
CP(95)=-0.0900	CP(58)=-0.0740	CP(21)=-0.0922	CP(131)=-0.0761
CP(96)=-0.0823	CP(59)=-0.0739	CP(22)=-0.0893	CP(132)=-0.0869
CP(97)=-0.0726	CP(133)=-0.1247	CP(23)=-0.0770	CP(60)=-0.1276
CP(98)=-0.0809	CP(134)=-0.1149	CP(24)=-0.0788	CP(61)=-0.1362
CP(99)=-0.0962	CP(135)=-0.0882	CP(25)=-0.0790	CP(62)=-0.1189
CP(100)=-0.1393	CP(136)=-0.0633	CP(26)=-0.0927	CP(63)=-0.0613
CP(101)=-0.1168	CP(137)=-0.0642	CP(27)=-0.1371	CP(64)=-0.0560
CP(102)=-0.0475	CP(138)=-0.0550	CP(28)=-0.1229	CP(65)=-0.0536
CP(103)=-0.0662	CP(139)=-0.0794	CP(29)=-0.1015	CP(66)=-0.0784
CP(104)=-0.0731	CP(140)=-0.0726	CP(30)=-0.0513	CP(67)=-0.0726
CP(105)=-0.0646	CP(141)= 0.0091	CP(31)=-0.0651	CP(68)=-0.0388
CP(106)=-0.0205	CP(142)= 0.0440	CP(32)=-0.0817	CP(69)= 0.0100
CP(107)= 0.0236	CP(143)= 0.0193	CP(33)= 0.0079	CP(70)= 0.0440
CP(108)= 0.0195	CP(144)=-0.0054	CP(34)= 0.0469	CP(71)=-0.0035
CP(109)=-0.0701	CP(145)=-0.0412	CP(35)=-0.0274	CP(72)=-0.0445
CP(110)=-0.1088	CP(146)=-0.1046	CP(36)=-0.0871	CP(73)=-0.0741
CP(174)=-0.1601	CP(161)=-0.1753	CP(37)=-0.1231	CP(74)=-0.1241
CP(175)=-0.2144	CP(162)=-0.2537	CP(147)=-0.1601	CP(187)=-0.1753
CP(176)=-0.3224	CP(163)=-0.3362	CP(148)=-0.2856	CP(188)=-0.3087
CP(177)=-0.2899	CP(164)=-0.2619	CP(149)=-0.3298	CP(189)=-0.3233
CP(178)=-0.1724	CP(165)=-0.1526	CP(150)=-0.2276	CP(190)=-0.2023
CP(179)=-0.0723	CP(166)=-0.0501	CP(151)=-0.1262	CP(191)=-0.1016
CP(180)= 0.0045	CP(167)= 0.0380	CP(152)=-0.0243	CP(192)=-0.0154
CP(181)= 0.0813	CP(168)= 0.0934	CP(153)= 0.0553	CP(193)= 0.0707
CP(182)= 0.1260	CP(169)= 0.1359	CP(154)= 0.1055	CP(194)= 0.1174
CP(183)= 0.1559	CP(170)= 0.1618	CP(155)= 0.1449	CP(195)= 0.1522
CP(184)= 0.1711	CP(171)= 0.1730	CP(156)= 0.1664	CP(196)= 0.1704
CP(185)= 0.1597	CP(172)= 0.1574	CP(157)= 0.1719	CP(197)= 0.1665
CP(186)= 0.0885	CP(173)= 0.1118	CP(158)= 0.1727	CP(198)= 0.1627
		CP(159)= 0.1617	CP(199)= 0.1340
		CP(160)= 0.1507	

CPB1= 0.0231 CPB2= 0.0210 CPB3= 0.0212 CPB4= 0.0177

CONTOURED AFTBODY CONFIGURATION

MACH=0.898 PT=2698.290PSF P1=1598.568PSF Q= 902.698PSF RE= 5.298X 10**-6/FT

CP(75)= 0.3642	CP(38)= 0.4837	CP(1)= 0.3634	CP(111)= 0.4377
CP(76)= 0.1712	CP(39)= 0.3152	CP(2)= 0.2511	CP(112)= 0.1558
CP(77)= 0.0867	CP(40)= 0.1252	CP(3)= 0.1546	CP(113)= 0.0368
CP(78)= 0.0146	CP(41)= 0.0163	CP(4)= 0.0581	CP(114)= 0.0088
CP(79)= 0.0241	CP(42)= 0.0073	CP(5)= 0.0236	CP(115)=-0.0191
CP(80)=-0.0036	CP(43)=-0.0018	CP(6)= 0.0033	CP(116)= 0.0091
CP(81)= 0.0025	CP(44)= 0.0169	CP(7)= 0.0027	CP(117)= 0.0373
CP(82)=-0.0000	CP(45)= 0.0699	CP(8)= 0.0062	CP(118)= 0.0732
CP(83)= 0.0226	CP(46)= 0.1108	CP(9)= 0.0215	CP(119)= 0.1240
CP(84)= 0.0452	CP(47)= 0.1210	CP(10)= 0.0419	CP(120)= 0.1158
CP(85)= 0.0936	CP(48)= 0.1038	CP(11)= 0.0927	CP(121)= 0.0898
CP(86)= 0.1017	CP(49)= 0.0707	CP(12)= 0.1190	CP(122)= 0.0527
CP(87)= 0.1097	CP(50)= 0.0235	CP(13)= 0.1212	CP(123)=-0.0046
CP(88)= 0.0762	CP(51)=-0.0557	CP(14)= 0.0925	CP(124)=-0.0620
CP(89)= 0.0427	CP(52)=-0.0779	CP(15)= 0.0602	CP(125)=-0.0836
CP(90)=-0.0345	CP(53)=-0.0848	CP(16)= 0.0029	CP(126)=-0.0890
CP(91)=-0.0582	CP(54)=-0.0982	CP(17)=-0.0543	CP(127)=-0.1023
CP(92)=-0.0818	CP(55)=-0.0950	CP(18)=-0.0830	CP(128)=-0.0908
CP(93)=-0.0939	CP(56)=-0.1061	CP(19)=-0.0883	CP(129)=-0.0945
CP(94)=-0.0948	CP(57)=-0.0810	CP(20)=-0.1080	CP(130)=-0.0827
CP(95)=-0.0914	CP(58)=-0.0739	CP(21)=-0.0940	CP(131)=-0.0760
CP(96)=-0.0837	CP(59)=-0.0730	CP(22)=-0.0912	CP(132)=-0.0868
CP(97)=-0.0736	CP(133)=-0.1258	CP(23)=-0.0785	CP(60)=-0.1289
CP(98)=-0.0827	CP(134)=-0.1157	CP(24)=-0.0806	CP(61)=-0.1372
CP(99)=-0.1008	CP(135)=-0.0979	CP(25)=-0.0809	CP(62)=-0.1195
CP(100)=-0.1415	CP(136)=-0.0622	CP(26)=-0.0945	CP(63)=-0.0607
CP(101)=-0.1191	CP(137)=-0.0648	CP(27)=-0.1394	CP(64)=-0.0557
CP(102)=-0.0885	CP(138)=-0.0547	CP(28)=-0.1271	CP(65)=-0.0534
CP(103)=-0.0670	CP(139)=-0.0797	CP(29)=-0.1055	CP(66)=-0.0790
CP(104)=-0.0753	CP(140)=-0.0721	CP(30)=-0.0524	CP(67)=-0.0721
CP(105)=-0.0654	CP(141)= 0.0105	CP(31)=-0.0664	CP(68)=-0.0385
CP(106)=-0.0212	CP(142)= 0.0456	CP(32)=-0.0842	CP(69)= 0.0111
CP(107)= 0.0231	CP(143)= 0.0204	CP(33)= 0.0073	CP(70)= 0.0456
CP(108)= 0.0193	CP(144)=-0.0048	CP(34)= 0.0469	CP(71)=-0.0033
CP(109)=-0.0714	CP(145)=-0.0406	CP(35)=-0.0289	CP(72)=-0.0441
CP(110)=-0.1086	CP(146)=-0.1047	CP(36)=-0.0884	CP(73)=-0.0735
CP(174)=-0.1615	CP(161)=-0.1748	CP(37)=-0.1240	CP(74)=-0.1240
CP(175)=-0.2141	CP(162)=-0.2537	CP(147)=-0.1615	CP(187)=-0.1748
CP(176)=-0.3285	CP(163)=-0.3438	CP(148)=-0.2895	CP(188)=-0.3133
CP(177)=-0.2998	CP(164)=-0.2664	CP(149)=-0.3393	CP(189)=-0.3348
CP(178)=-0.1751	CP(165)=-0.1541	CP(150)=-0.2310	CP(190)=-0.2035
CP(179)=-0.0735	CP(166)=-0.0496	CP(151)=-0.1288	CP(191)=-0.1015
CP(180)= 0.0052	CP(167)= 0.0409	CP(152)=-0.0247	CP(192)=-0.0139
CP(181)= 0.0840	CP(168)= 0.0975	CP(153)= 0.0576	CP(193)= 0.0738
CP(182)= 0.1294	CP(169)= 0.1407	CP(154)= 0.1083	CP(194)= 0.1216
CP(183)= 0.1596	CP(170)= 0.1664	CP(155)= 0.1483	CP(195)= 0.1567
CP(184)= 0.1739	CP(171)= 0.1768	CP(156)= 0.1688	CP(196)= 0.1743
CP(185)= 0.1608	CP(172)= 0.1588	CP(157)= 0.1743	CP(197)= 0.1694
CP(186)= 0.0899	CP(173)= 0.1123	CP(158)= 0.1751	CP(198)= 0.1645
		CP(159)= 0.1633	CP(199)= 0.1359
		CP(160)= 0.1515	

CPB1= 0.0198 CPB2= 0.0193 CPB3= 0.0190 CPB4= 0.0157

CONTOURED AFTBODY CONFIGURATION

MACH=1.196 PT= 703.501PSF P1= 291.531PSF Q= 292.027PSF RE= 1.469X 10**-6/FT

CP(75)= 0.4594	CP(38)= 0.5448	CP(1)= 0.4478	CP(111)= 0.5173
CP(76)= 0.3343	CP(39)= 0.4150	CP(2)= 0.3600	CP(112)= 0.2917
CP(77)= 0.2525	CP(40)= 0.2351	CP(3)= 0.2695	CP(113)= 0.1562
CP(78)= 0.1704	CP(41)= 0.1003	CP(4)= 0.1791	CP(114)= 0.1087
CP(79)= 0.1152	CP(42)= 0.0679	CP(5)= 0.1242	CP(115)= 0.0612
CP(80)= 0.0668	CP(43)= 0.0355	CP(6)= 0.0828	CP(116)= 0.0365
CP(81)= 0.0279	CP(44)= 0.0309	CP(7)= 0.0493	CP(117)= 0.0119
CP(82)= 0.0198	CP(45)= 0.0154	CP(8)= 0.0373	CP(118)= 0.0060
CP(83)= 0.0167	CP(46)= 0.0498	CP(9)= 0.0230	CP(119)= 0.0900
CP(84)= 0.0136	CP(47)= 0.1249	CP(10)= 0.0092	CP(120)= 0.1289
CP(85)= 0.0344	CP(48)= 0.1725	CP(11)= 0.0225	CP(121)= 0.1560
CP(86)= 0.1053	CP(49)= 0.1677	CP(12)= 0.0728	CP(122)= 0.1608
CP(87)= 0.1763	CP(50)= 0.1669	CP(13)= 0.1396	CP(123)= 0.1288
CP(88)= 0.1861	CP(51)= 0.1070	CP(14)= 0.1658	CP(124)= 0.0968
CP(89)= 0.1805	CP(52)= 0.0681	CP(15)= 0.1695	CP(125)= 0.0595
CP(90)= 0.1296	CP(53)= 0.0306	CP(16)= 0.1322	CP(126)= 0.0394
CP(91)= 0.0807	CP(54)= 0.0161	CP(17)= 0.0949	CP(127)=-0.0046
CP(92)= 0.0319	CP(55)=-0.0169	CP(18)= 0.0514	CP(128)=-0.0098
CP(93)= 0.0139	CP(56)=-0.0335	CP(19)= 0.0262	CP(129)=-0.0249
CP(94)=-0.0140	CP(57)=-0.0288	CP(20)=-0.0054	CP(130)=-0.0320
CP(95)=-0.0308	CP(58)=-0.0317	CP(21)=-0.0219	CP(131)=-0.0404
CP(96)=-0.0322	CP(59)=-0.0472	CP(22)=-0.0361	CP(132)=-0.0384
CP(97)=-0.0356	CP(133)=-0.0389	CP(23)=-0.0328	CP(60)=-0.0455
CP(98)=-0.0362	CP(134)=-0.0806	CP(24)=-0.0295	CP(61)=-0.0741
CP(99)=-0.0406	CP(135)=-0.0799	CP(25)=-0.0354	CP(62)=-0.0781
CP(100)=-0.0786	CP(136)=-0.0751	CP(26)=-0.0356	CP(63)=-0.0667
CP(101)=-0.0920	CP(137)=-0.0819	CP(27)=-0.0815	CP(64)=-0.0761
CP(102)=-0.0921	CP(138)=-0.0605	CP(28)=-0.0934	CP(65)=-0.0549
CP(103)=-0.0791	CP(139)=-0.0715	CP(29)=-0.0950	CP(66)=-0.0691
CP(104)=-0.0608	CP(140)=-0.0786	CP(30)=-0.0610	CP(67)=-0.0777
CP(105)=-0.1029	CP(141)=-0.0748	CP(31)=-0.0549	CP(68)=-0.1079
CP(106)=-0.0744	CP(142)=-0.0203	CP(32)=-0.0806	CP(69)=-0.0798
CP(107)=-0.0458	CP(143)=-0.0013	CP(33)=-0.0686	CP(70)=-0.0203
CP(108)= 0.0235	CP(144)= 0.0178	CP(34)= 0.0030	CP(71)= 0.0208
CP(109)=-0.0071	CP(145)= 0.0048	CP(35)= 0.0117	CP(72)=-0.0004
CP(110)=-0.0340	CP(146)=-0.0274	CP(36)=-0.0164	CP(73)=-0.0181
CP(174)=-0.0675	CP(161)=-0.0734	CP(37)=-0.0528	CP(74)=-0.0410
CP(175)=-0.1021	CP(162)=-0.1311	CP(147)=-0.0675	CP(187)=-0.0734
CP(176)=-0.1784	CP(163)=-0.2069	CP(148)=-0.1370	CP(188)=-0.1501
CP(177)=-0.2669	CP(164)=-0.2937	CP(149)=-0.2083	CP(189)=-0.2096
CP(178)=-0.3235	CP(165)=-0.3470	CP(150)=-0.3011	CP(190)=-0.3038
CP(179)=-0.3687	CP(166)=-0.3882	CP(151)=-0.3507	CP(191)=-0.3566
CP(180)=-0.3396	CP(167)=-0.3690	CP(152)=-0.3850	CP(192)=-0.3347
CP(181)=-0.3105	CP(168)=-0.3079	CP(153)=-0.3453	CP(193)=-0.3129
CP(182)=-0.2214	CP(169)=-0.1876	CP(154)=-0.2779	CP(194)=-0.2678
CP(183)=-0.1033	CP(170)=-0.0588	CP(155)=-0.1565	CP(195)=-0.1243
CP(184)=-0.0064	CP(171)= 0.0218	CP(156)=-0.0569	CP(196)=-0.0231
CP(185)= 0.0675	CP(172)= 0.0743	CP(157)=-0.0110	CP(197)= 0.0249
CP(186)= 0.0427	CP(173)= 0.0678	CP(158)= 0.0309	CP(198)= 0.0729
		CP(159)= 0.0593	CP(199)= 0.0811
		CP(160)= 0.0877	

CPB1=-0.0236 CPB2=-0.0248 CPB3=-0.0241 CPB4=-0.0271

CONTOURED AFTBODY CONFIGURATION

MACH=1.196 PT=1145.030PSF P1= 495.361PSF Q= 496.023PSF RE= 2.490X 10**-6/FT

CP(75)= 0.4525	CP(38)= 0.5413	CP(1)= 0.4418	CP(111)= 0.5059
CP(76)= 0.3165	CP(39)= 0.4093	CP(2)= 0.3667	CP(112)= 0.2859
CP(77)= 0.2189	CP(40)= 0.2334	CP(3)= 0.2709	CP(113)= 0.1568
CP(78)= 0.1423	CP(41)= 0.0957	CP(4)= 0.1752	CP(114)= 0.1061
CP(79)= 0.1132	CP(42)= 0.0657	CP(5)= 0.1188	CP(115)= 0.0554
CP(80)= 0.0703	CP(43)= 0.0357	CP(6)= 0.0836	CP(116)= 0.0332
CP(81)= 0.0326	CP(44)= 0.0294	CP(7)= 0.0498	CP(117)= 0.0111
CP(82)= 0.0216	CP(45)= 0.0130	CP(8)= 0.0382	CP(118)= 0.0052
CP(83)= 0.0266	CP(46)= 0.0527	CP(9)= 0.0281	CP(119)= 0.0973
CP(84)= 0.0316	CP(47)= 0.1339	CP(10)= 0.0230	CP(120)= 0.1415
CP(85)= 0.0512	CP(48)= 0.1788	CP(11)= 0.0359	CP(121)= 0.1655
CP(86)= 0.1104	CP(49)= 0.1744	CP(12)= 0.0830	CP(122)= 0.1735
CP(87)= 0.1695	CP(50)= 0.1655	CP(13)= 0.1426	CP(123)= 0.1314
CP(88)= 0.1748	CP(51)= 0.0987	CP(14)= 0.1598	CP(124)= 0.0892
CP(89)= 0.1697	CP(52)= 0.0581	CP(15)= 0.1612	CP(125)= 0.0452
CP(90)= 0.1171	CP(53)= 0.0313	CP(16)= 0.1244	CP(126)= 0.0268
CP(91)= 0.0725	CP(54)= 0.0117	CP(17)= 0.0877	CP(127)=-0.0110
CP(92)= 0.0279	CP(55)=-0.0236	CP(18)= 0.0490	CP(128)=-0.0131
CP(93)= 0.0092	CP(56)=-0.0448	CP(19)= 0.0213	CP(129)=-0.0315
CP(94)=-0.0141	CP(57)=-0.0313	CP(20)=-0.0078	CP(130)=-0.0377
CP(95)=-0.0325	CP(58)=-0.0310	CP(21)=-0.0226	CP(131)=-0.0412
CP(96)=-0.0293	CP(59)=-0.0488	CP(22)=-0.0366	CP(132)=-0.0372
CP(97)=-0.0356	CP(133)=-0.0376	CP(23)=-0.0343	CP(60)=-0.0472
CP(98)=-0.0409	CP(134)=-0.0842	CP(24)=-0.0339	CP(61)=-0.0780
CP(99)=-0.0454	CP(135)=-0.0866	CP(25)=-0.0390	CP(62)=-0.0815
CP(100)=-0.0805	CP(136)=-0.0732	CP(26)=-0.0389	CP(63)=-0.0692
CP(101)=-0.0893	CP(137)=-0.0802	CP(27)=-0.0832	CP(64)=-0.0726
CP(102)=-0.0875	CP(138)=-0.0594	CP(28)=-0.0912	CP(65)=-0.0500
CP(103)=-0.0785	CP(139)=-0.0714	CP(29)=-0.0925	CP(66)=-0.0668
CP(104)=-0.0625	CP(140)=-0.0812	CP(30)=-0.0621	CP(67)=-0.0778
CP(105)=-0.1009	CP(141)=-0.0733	CP(31)=-0.0603	CP(68)=-0.1144
CP(106)=-0.0715	CP(142)=-0.0183	CP(32)=-0.0814	CP(69)=-0.0813
CP(107)=-0.0422	CP(143)=-0.0012	CP(33)=-0.0647	CP(70)=-0.0183
CP(108)= 0.0230	CP(144)= 0.0159	CP(34)= 0.0044	CP(71)= 0.0237
CP(109)=-0.0068	CP(145)= 0.0057	CP(35)= 0.0092	CP(72)=-0.0015
CP(110)=-0.0357	CP(146)=-0.0263	CP(36)=-0.0137	CP(73)=-0.0192
CP(174)=-0.0723	CP(161)=-0.0653	CP(37)=-0.0525	CP(74)=-0.0429
CP(175)=-0.0956	CP(162)=-0.1261	CP(147)=-0.0723	CP(187)=-0.0653
CP(176)=-0.1856	CP(163)=-0.2020	CP(148)=-0.1367	CP(188)=-0.1694
CP(177)=-0.2703	CP(164)=-0.2890	CP(149)=-0.2185	CP(189)=-0.2351
CP(178)=-0.3271	CP(165)=-0.3451	CP(150)=-0.2962	CP(190)=-0.3120
CP(179)=-0.3706	CP(166)=-0.3903	CP(151)=-0.3481	CP(191)=-0.3659
CP(180)=-0.3401	CP(167)=-0.3769	CP(152)=-0.3850	CP(192)=-0.3490
CP(181)=-0.3095	CP(168)=-0.3204	CP(153)=-0.3523	CP(193)=-0.3322
CP(182)=-0.2263	CP(169)=-0.2172	CP(154)=-0.2924	CP(194)=-0.2854
CP(183)=-0.1145	CP(170)=-0.0855	CP(155)=-0.1769	CP(195)=-0.1353
CP(184)=-0.0142	CP(171)= 0.0185	CP(156)=-0.0698	CP(196)=-0.0224
CP(185)= 0.0697	CP(172)= 0.0789	CP(157)=-0.0260	CP(197)= 0.0283
CP(186)= 0.0419	CP(173)= 0.0701	CP(158)= 0.0266	CP(198)= 0.0790
		CP(159)= 0.0599	CP(199)= 0.0853
		CP(160)= 0.0932	

CPB1=-0.0362 CPB2=-0.0386 CPB3=-0.0374 CPB4=-0.0400

CONTOURED AFTBODY CONFIGURATION

MACH=1.198 PT=1919.330PSF P1= 793.793PSF Q= 797.172PSF RE= 4.012X 10**-6/FT

CP(75)= 0.4451	CP(38)= 0.5430	CP(1)= 0.4453	CP(111)= 0.4993
CP(76)= 0.2860	CP(39)= 0.4214	CP(2)= 0.3634	CP(112)= 0.2738
CP(77)= 0.2117	CP(40)= 0.2505	CP(3)= 0.2731	CP(113)= 0.1557
CP(78)= 0.1450	CP(41)= 0.1127	CP(4)= 0.1829	CP(114)= 0.1048
CP(79)= 0.1254	CP(42)= 0.0681	CP(5)= 0.1323	CP(115)= 0.0539
CP(80)= 0.0826	CP(43)= 0.0236	CP(6)= 0.0912	CP(116)= 0.0345
CP(81)= 0.0377	CP(44)= 0.0298	CP(7)= 0.0503	CP(117)= 0.0151
CP(82)= 0.0192	CP(45)= 0.0117	CP(8)= 0.0419	CP(118)= 0.0067
CP(83)= 0.0233	CP(46)= 0.0516	CP(9)= 0.0289	CP(119)= 0.0931
CP(84)= 0.0275	CP(47)= 0.1448	CP(10)= 0.0116	CP(120)= 0.1460
CP(85)= 0.0394	CP(48)= 0.1759	CP(11)= 0.0271	CP(121)= 0.1656
CP(86)= 0.1028	CP(49)= 0.1750	CP(12)= 0.0673	CP(122)= 0.1738
CP(87)= 0.1662	CP(50)= 0.1664	CP(13)= 0.1353	CP(123)= 0.1312
CP(88)= 0.1721	CP(51)= 0.1006	CP(14)= 0.1665	CP(124)= 0.0886
CP(89)= 0.1829	CP(52)= 0.0588	CP(15)= 0.1700	CP(125)= 0.0426
CP(90)= 0.1260	CP(53)= 0.0315	CP(16)= 0.1335	CP(126)= 0.0187
CP(91)= 0.0829	CP(54)= 0.0073	CP(17)= 0.0970	CP(127)=-0.0090
CP(92)= 0.0399	CP(55)=-0.0188	CP(18)= 0.0460	CP(128)=-0.0125
CP(93)= 0.0145	CP(56)=-0.0455	CP(19)= 0.0327	CP(129)=-0.0325
CP(94)=-0.0071	CP(57)=-0.0296	CP(20)=-0.0022	CP(130)=-0.0365
CP(95)=-0.0280	CP(58)=-0.0227	CP(21)=-0.0233	CP(131)=-0.0369
CP(96)=-0.0348	CP(59)=-0.0453	CP(22)=-0.0347	CP(132)=-0.0334
CP(97)=-0.0292	CP(133)=-0.0326	CP(23)=-0.0303	CP(60)=-0.0444
CP(98)=-0.0416	CP(134)=-0.0811	CP(24)=-0.0288	CP(61)=-0.0794
CP(99)=-0.0430	CP(135)=-0.0859	CP(25)=-0.0276	CP(62)=-0.0790
CP(100)=-0.0815	CP(136)=-0.0774	CP(26)=-0.0308	CP(63)=-0.0713
CP(101)=-0.0925	CP(137)=-0.0741	CP(27)=-0.0880	CP(64)=-0.0683
CP(102)=-0.0920	CP(138)=-0.0655	CP(28)=-0.1003	CP(65)=-0.0516
CP(103)=-0.0760	CP(139)=-0.0676	CP(29)=-0.0978	CP(66)=-0.0685
CP(104)=-0.0606	CP(140)=-0.0816	CP(30)=-0.0594	CP(67)=-0.0732
CP(105)=-0.1039	CP(141)=-0.0789	CP(31)=-0.0530	CP(68)=-0.1128
CP(106)=-0.0745	CP(142)=-0.0186	CP(32)=-0.0784	CP(69)=-0.0804
CP(107)=-0.0452	CP(143)=-0.0012	CP(33)=-0.0732	CP(70)=-0.0186
CP(108)= 0.0261	CP(144)= 0.0163	CP(34)= 0.0092	CP(71)= 0.0209
CP(109)=-0.0070	CP(145)= 0.0077	CP(35)= 0.0064	CP(72)= 0.0105
CP(110)=-0.0418	CP(146)=-0.0241	CP(36)=-0.0018	CP(73)=-0.0148
CP(174)=-0.0773	CP(161)=-0.0569	CP(37)=-0.0517	CP(74)=-0.0537
CP(175)=-0.0857	CP(162)=-0.1146	CP(147)=-0.0773	CP(187)=-0.0569
CP(176)=-0.1832	CP(163)=-0.1945	CP(148)=-0.1473	CP(188)=-0.1719
CP(177)=-0.2552	CP(164)=-0.2770	CP(149)=-0.2167	CP(189)=-0.2389
CP(178)=-0.3124	CP(165)=-0.3323	CP(150)=-0.2907	CP(190)=-0.3060
CP(179)=-0.3587	CP(166)=-0.3797	CP(151)=-0.3415	CP(191)=-0.3582
CP(180)=-0.3338	CP(167)=-0.3725	CP(152)=-0.3741	CP(192)=-0.3471
CP(181)=-0.3089	CP(168)=-0.3225	CP(153)=-0.3391	CP(193)=-0.3361
CP(182)=-0.2401	CP(169)=-0.2370	CP(154)=-0.2927	CP(194)=-0.2928
CP(183)=-0.1331	CP(170)=-0.1091	CP(155)=-0.1807	CP(195)=-0.1636
CP(184)=-0.0297	CP(171)= 0.0128	CP(156)=-0.0793	CP(196)=-0.0326
CP(185)= 0.0697	CP(172)= 0.0824	CP(157)=-0.0297	CP(197)= 0.0261
CP(186)= 0.0491	CP(173)= 0.0770	CP(158)= 0.0180	CP(198)= 0.0848
		CP(159)= 0.0567	CP(199)= 0.0948
		CP(160)= 0.0954	

CPB1=-0.0455 CPB2=-0.0465 CPB3=-0.0455 CPB4=-0.0493

CONTOURED AFTBODY CONFIGURATION

MACH=1.197 P1=2250.470PSF P1= 931.650PSF Q= 934.664PSF RE= 4.686X 10**-6/FT

CP(75)= 0.4454
CP(76)= 0.2827
CP(77)= 0.2065
CP(78)= 0.1420
CP(79)= 0.1235
CP(80)= 0.0809
CP(81)= 0.0367
CP(82)= 0.0140
CP(83)= 0.0230
CP(84)= 0.0271
CP(85)= 0.0394
CP(86)= 0.1037
CP(87)= 0.1679
CP(88)= 0.1731
CP(89)= 0.1841
CP(90)= 0.1263
CP(91)= 0.0829
CP(92)= 0.0395
CP(93)= 0.0150
CP(94)=-0.6054
CP(95)=-0.0276
CP(96)=-0.0433
CP(97)=-0.0301
CP(98)=-0.0415
CP(99)=-0.0434
CP(100)=-0.0807
CP(101)=-0.0925
CP(102)=-0.0910
CP(103)=-0.0748
CP(104)=-0.0619
CP(105)=-0.1036
CP(106)=-0.0746
CP(107)=-0.0457
CP(108)= 0.0271
CP(109)=-0.0064
CP(110)=-0.0415
CP(174)=-0.0766
CP(175)=-0.0858
CP(176)=-0.1818
CP(177)=-0.2554
CP(178)=-0.3131
CP(179)=-0.3594
CP(180)=-0.3350
CP(181)=-0.3107
CP(182)=-0.2428
CP(183)=-0.1364
CP(184)=-0.0314
CP(185)= 0.0706
CP(186)= 0.0512

CP(38)= 0.5448
CP(39)= 0.4234
CP(40)= 0.2493
CP(41)= 0.1110
CP(42)= 0.0663
CP(43)= 0.0215
CP(44)= 0.0249
CP(45)= 0.0101
CP(46)= 0.0518
CP(47)= 0.1460
CP(48)= 0.1773
CP(49)= 0.1745
CP(50)= 0.1674
CP(51)= 0.1006
CP(52)= 0.0587
CP(53)= 0.0337
CP(54)= 0.0075
CP(55)=-0.0181
CP(56)=-0.0463
CP(57)=-0.0294
CP(58)=-0.0235
CP(59)=-0.0456
CP(133)=-0.0319
CP(134)=-0.0404
CP(135)=-0.0460
CP(136)=-0.0768
CP(137)=-0.0745
CP(138)=-0.0648
CP(139)=-0.0674
CP(140)=-0.0817
CP(141)=-0.0748
CP(142)=-0.0189
CP(143)=-0.0004
CP(144)= 0.0181
CP(145)= 0.0088
CP(146)=-0.0235
CP(161)=-0.0582
CP(162)=-0.1136
CP(163)=-0.1922
CP(164)=-0.2744
CP(165)=-0.3313
CP(166)=-0.3792
CP(167)=-0.3731
CP(168)=-0.3233
CP(169)=-0.2409
CP(170)=-0.1123
CP(171)= 0.0129
CP(172)= 0.0836
CP(173)= 0.0786

CP(1)= 0.4473
CP(2)= 0.3631
CP(3)= 0.2723
CP(4)= 0.1815
CP(5)= 0.1315
CP(6)= 0.0908
CP(7)= 0.0495
CP(8)= 0.0425
CP(9)= 0.0293
CP(10)= 0.0117
CP(11)= 0.0268
CP(12)= 0.0687
CP(13)= 0.1376
CP(14)= 0.1676
CP(15)= 0.1719
CP(16)= 0.1352
CP(17)= 0.0984
CP(18)= 0.0476
CP(19)= 0.0326
CP(20)=-0.0019
CP(21)=-0.0219
CP(22)=-0.0345
CP(23)=-0.0301
CP(24)=-0.0286
CP(25)=-0.0281
CP(26)=-0.0313
CP(27)=-0.0875
CP(28)=-0.1017
CP(29)=-0.0989
CP(30)=-0.0594
CP(31)=-0.0526
CP(32)=-0.0785
CP(33)=-0.0731
CP(34)= 0.0081
CP(35)= 0.0071
CP(36)=-0.0015
CP(37)=-0.0524
CP(147)=-0.0766
CP(148)=-0.1468
CP(149)=-0.2159
CP(150)=-0.2904
CP(151)=-0.3415
CP(152)=-0.3746
CP(153)=-0.3408
CP(154)=-0.2951
CP(155)=-0.1832
CP(156)=-0.0805
CP(157)=-0.0313
CP(158)= 0.0176
CP(159)= 0.0581
CP(160)= 0.0987

CP(111)= 0.4969
CP(112)= 0.2696
CP(113)= 0.1548
CP(114)= 0.1033
CP(115)= 0.0518
CP(116)= 0.0339
CP(117)= 0.0159
CP(118)= 0.0080
CP(119)= 0.0942
CP(120)= 0.1469
CP(121)= 0.1672
CP(122)= 0.1759
CP(123)= 0.1324
CP(124)= 0.0849
CP(125)= 0.0427
CP(126)= 0.0186
CP(127)=-0.0092
CP(128)=-0.0127
CP(129)=-0.0324
CP(130)=-0.0366
CP(131)=-0.0359
CP(132)=-0.0325
CP(60)=-0.0440
CP(61)=-0.0797
CP(62)=-0.0784
CP(63)=-0.0713
CP(64)=-0.0680
CP(65)=-0.0522
CP(66)=-0.0681
CP(67)=-0.0726
CP(68)=-0.1127
CP(69)=-0.0798
CP(70)=-0.0189
CP(71)= 0.0213
CP(72)= 0.0114
CP(73)=-0.0138
CP(74)=-0.0537
CP(187)=-0.0582
CP(188)=-0.1716
CP(189)=-0.2397
CP(190)=-0.3064
CP(191)=-0.3592
CP(192)=-0.3494
CP(193)=-0.3396
CP(194)=-0.2941
CP(195)=-0.1683
CP(196)=-0.0340
CP(197)= 0.0264
CP(198)= 0.0868
CP(199)= 0.0973

CPB1=-0.0473 CPB2=-0.0483 CPB3=-0.0477 CPB4=-0.0514

NOMENCLATURE

A	Local cross-sectional area
A_{max}	Maximum model cross-sectional area, 1.424 ft^2
A_{wet}	Model wetted area
C_f	Frankl-Voishel average local skin friction coefficient
C_p	Pressure coefficient, (local body pressure - P_∞)/q_∞
CA_{AB}	Pressure-integrated afterbody axial-force coefficient
CA_{FB}	Pressure-integrated forebody axial-force coefficient
CD	Drag coefficient, based on maximum model cross-sectional area
CD_F	Skin friction drag coefficient, C_f A_{wet}/A_{max}
CDP	Model pressure drag coefficient, integrated in body axis, based on maximum model cross-sectional area
CDP_{AB}	Afterbody pressure drag coefficient, integrated in body axis, based on maximum model cross-sectional area
CDP_{FB}	Forebody pressure drag coefficient, integrated in body axis, based on maximum model cross-sectional area
DELM	M_∞ - M_c
K	Grit height, in.
L	Model length, 10.837 ft
M_c	Effective tunnel plenum Mach number
M_∞	Free-stream Mach number
ΔM_∞	Deviation from free-stream Mach number

MS	Model station
P_T	Free-stream total pressure, psfa
P_∞	Free-stream static pressure, psfa
q_∞	Free-stream dynamic pressure, psfa
Re	Characteristic Reynolds number based on model length
Roll	Model Roll angle, deg
X	Axial distance measured from model nose, in.
α	Angle of attack, deg
δ	Precision of measurements
θ	Pressure orifice row location, deg

SUBSCRIPT

x	Pressure orifice number